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Section of Radiology and Radiotherapy.[1]

President: A. A. Merritt, M.B., B.S., Western Australia.

Vice-Presidents: Richard Row, M.B., B.S., D.D.R., Queensland; C. F. Macdonald, M.B., D.M.R.E., F.R.A.C.P., F.F.R., F.C.R.A., Victoria; Isobel P. Waugh, M.B., B.S., D.R., New South Wales; B. S. Hanson, O.B.O., D.S.O., E.D., M.B., B.S., F.C.R.A., South Australia; R. D. McIntosh, B.A., M.B., B.S., F.C.R.A., Tasmania.

Honorary Secretary: H. Holden, M.B., Ch.B., M.R.C.S., L.R.C.P., D.M.R.T., Tasmania.

Radiation Hazard.

A. A. MERRITT (Western Australia) took as the subject of his presidential address "Some Thoughts on Radiation Hazard". He said that radiologists must, in the present state of knowledge, strive to minimize radiation hazards to the patient. Clinicians should be made aware of the hazards by early education. They must give more consideration to the limitations of radiological examination, and must be assiduous in imparting that knowledge to their juniors, to obviate the indiscriminate use of X rays. The onus of protection of patients must be not only on the radiologists, but borne by all sections of the medical profession. Consultation before examination must be encouraged to a greater extent than was the usual practice. The embryo radiologist must be educated to the extent at which he could act as a consultant, and not as a mere technician. Clinicians in children's hospitals and obstetric hospitals must give greater consideration to the nice balance between clinical necessity and radiological hazard.

Half a Century of Progress in Radiodiagnostic Protection.

J. A. BLOOMFIELD (Tasmania) read a paper entitled "Half a Century of Progress in Radiodiagnostic Protection". He said that the discovery of X rays in 1895 had been followed by their rapid medical exploitation, and by the rapid realization of their harmful effects. The first protection committee had been initiated in 1897. Dr. Bloomfield went on to say that leukæmia was caused by X rays, but not at the dosage encountered in diagnostic work. An illustration of that fact was the low incidence of leukæmia

among patients with ankylosing spondylitis treated for varying numbers of years by X-ray irradiation. There was evidence that the supposed leukæmogenic effect on the fœtus of prenatal irradiation was doubtful and insignificant, compared with death from other causes. However, heavily irradiated fœtuses developed microcephaly. X rays increased the mutation rate, which was genetically harmful. The diagnostic examinations that caused the greatest genetic effects were those involving the pelvic area. The diagnostic use of X rays was harmless to those past the reproductive period, and their effects could be minimized by advances in technique and materials, and by image intensifiers. Dr. Bloomfield finally urged that care should be exercised in ordering X-ray examinations.

COLIN MACDONALD (Victoria) asked if the Medical Research Council report suggested that a human being could receive up to 30*r* to the genital area up to the age of 30 years, and if that was considered a "safe" dose.

Dr. Bloomfield replied that 30*r* was regarded as a "safe" figure.

M. G. F. DONNAN (Western Australia) asked how one informed the public of the matter. He thought that any authoritative statement might be misinterpreted by the lay Press.

Dr. Bloomfield, in reply, said that he had no specific ideas.

D. B. ROSENTHAL (Victoria) asked what would be Dr. Bloomfield's reaction if a patient claimed that mass radiography was dangerous and refused to have a compulsory X-ray examination of the chest.

Dr. Bloomfield, in reply, said that the eradication of tuberculosis was more important than the risk involved.

H. A. LUKE (Victoria) said that mass surveys must continue, particularly now that drugs of the cortisone type were being used for asthma and were lighting up chest infections. He also said that chelating agents were not as yet safe and had been dropped lately. He pointed out that the use of an image intensifier did on a single exposure reduce the dose, but the image intensifier and cine-radiography together did not greatly reduce the dose. The detail in films was usually poor.

Plain Film Survey of the Abdomen.

I. P. WAUGH (New South Wales) read a paper entitled "Plain Film Survey of the Abdomen", in which he discussed the subject under six headings: calcification, soft tissue tumours, collections of fluid, abnormal gas patterns, traumatic lesions, foreign bodies. He said that calcification was usually visible unless it overlay bony structures, and mentioned briefly the various structures in which calcification might occur. Soft tissue tumours might be regarded as areas of homogeneous density displacing normal structures, but it was not usually possible to determine their routine, though their situation might provide a clue. Collections of fluid in the peritoneal cavity if small were most easily detected in the pelvis, with the patient in an upright position; in the case of massive effusion the position of the right border of the liver was a useful diagnostic sign. In discussing abnormal gas patterns, Dr. Waugh said that the study of gas patterns was important in patients with an acute abdominal condition, and in cases of congenital abnormalities in children. He discussed the significance of fluid levels in different types of intestinal obstruction. A characteristic feature sometimes seen in volvulus of the colon was the convergence of three lines to the point of torsion. In cases of obstruction caused by a gall-stone, gas might be present in the biliary tree. In cases of ruptured viscus, a chest X-ray film was valuable in demonstrating the presence of gas under the diaphragm. Referring to traumatic lesions, Dr. Waugh mentioned some signs suggestive of ruptured spleen or ruptured liver: an extraperitoneal hæmatoma might be evident as a broad band along the flank, which did not alter with the patient's position. Opaque foreign bodies usually presented no problem.

In conclusion, Dr. Waugh remarked that there were limitations to the study of the plain X-ray film of the abdomen. Usually it was a preliminary to further investigation, but for the acute abdominal condition it was the only radiological investigation permitted. He recommended close cooperation between the radiologist and the clinician at all times.

H. MASEL (Queensland) emphasized the value of the lateral recumbent view.

K. H. HALLAM (Victoria) pointed out that fluid levels in the bowel were not always indicative of obstruction, but might be due to enemata.

K. FRIEND (Tasmania) said that he was not convinced that the "cut-off" sign was diagnostic of acute pancreatitis.

M. G. F. DONNAN (Western Australia) asked how often the "cut-off" sign was seen in the absence of acute pancreatitis.

Dr. Waugh thought that the sign was often useful.

The Intravenous Pyelogram after Radical Hysterectomy and Radiotherapy.

COLIN MACDONALD (Victoria) read a paper on the appearances of the urinary tract (as shown by intravenous pyelography) subsequent to radical hysterectomy following radiotherapy for uterine carcinoma. His material was collected from the Radiosurgical Unit of the Royal Women's Hospital, Melbourne. He said that during the years 1950 to 1955 a total of 180 hysterectomies had been performed, and 157 of the patients had been studied by means of operative as well as pre-operative intravenous pyelography. The patients had also been given radon therapy before operation, and some had been given deep X-ray therapy in addition. As the surgery was radical (more extensive than that used by Wertheim or Victor Bonney), it was inevitable that in a considerable percentage of cases, particularly after radiation therapy, the ureter would be damaged, either operatively or by irradiation. A damaged ureter resulted frequently in obstruction, which, if it was progressive and not corrected, caused fatal renal damage. Dr. Macdonald went on to say that, despite text-book teaching, it had been found that ureteric obstruction resulting from involvement in growth, or from œdema or scar tissue, rarely gave rise to symptoms. Many hydronephrotic and non-functioning kidneys would never be recognized without routine post-operative pyelography. The spontaneous closure of ureteric fistulæ was believed to be largely a myth; it usually indicated that the kidney on the affected side had ceased to function.

Attempts to relieve ureteric obstruction by surgery—for example, ureterocolic anastomosis—had given some encouragement, efforts being made to preserve salvageable renal tissue, since the poorer kidney of the present might be the better, indeed the only kidney of the future. The routine taking of intravenous pyelograms at intervals of three to six months after operation was advocated. It had been found that one 14 by 17 inch film, made 20 minutes after injection of the dye and without abdominal compression, was all that was necessary in the majority of cases.

A. MASEL (Queensland) asked how long the examination was continued if the 20-minute film showed no dye concentration.

Dr. Macdonald replied that it could be continued for up to 60 minutes.

K. FRIEND (Tasmania) asked the period over which the intravenous pyelograms were carried out.

Dr. Macdonald said that they were carried out every three months while the patient was living.

A. A. MERRITT (Western Australia) asked how often the complications occurred and what was the over-all five-year survival rate.

Dr. Macdonald replied that of 180 patients who had undergone radical hysterectomy, 160 had routine and pre-operative investigation. The five-year survival rate for patients with carcinoma of the cervix was 46% and for patients with carcinoma of the body of the uterus 60%.

H. A. LUKE (Victoria) said that he was interested in the medial displacement of the ureters in radical hysterectomy and abdomino-perineal resection. The ureter simulated the contours seen in retroperitoneal periureteral fibroses. The displacement might cause stones to be missed in straight films if an intravenous pyelogram was not prepared.

The Diagnostic Use of X Rays in Dust Inhalation Diseases.

K. H. HALLAM (Victoria) read a paper entitled "The Diagnostic Use of X Rays in Dust Inhalation Diseases". He said that the metropolis of Melbourne, with its 1,500,000 inhabitants, had many pockets of industry where comparatively few workers were subjected to dust inhalation risks. Those risks might be obvious, as in such occupations as pottery and tile manufacturing and in the foundries; but in many other factories the risks were insidious, and involved only a few amongst many employees. Silicosis was in the main easily detectable by X-ray examination, but asbestosis was not. Combinations of dusts might give bizarre appearances. The X-ray examination was a very unstable basis for the diagnosis of dust inhalation diseases, in which protection, prevention and compensation were the main factors. The industrial history and the results of laboratory and clinical tests were paramount. Dr. Hallam went on to say that if men and women were to be protected from unnecessary risks, and if due and just compensation was to be made to those who had suffered physical incapacity from dust inhalation, there would have to be a compulsive urge towards over-all teamwork in the medical profession. Radiological examination was essential in all cases of suspected dust inhalation disease; but X-ray shadows or their absence should be assessed only in relation to other factors. Only direct radiography on full-size films was of value. More refined methods of examination would need to be employed for case-finding and for compensation. The final decisions were the prerogatives of the physician and the industrial medical officer in consultation. Dr. Hallam said, in conclusion, that workers in an industry that presented a dust hazard had the right to protection from disability by the concerted efforts of the medical profession.

Supervoltage Radiotherapy.

J. MADIGAN (Victoria) read a paper entitled "One Year's Experience with a Four Megavolt Linear Accelerator".

H. HOLDEN (Tasmania) read a paper entitled "Practical Considerations of a 'Theratron Junior' ". He said that a "Theratron Junior" had been installed at the Peter MacCallum Clinic, Launceston General Hospital, at the end of October, 1957. Few problems arose in the design of the building. It had to be added to the existing structure, and a convenient site was available where the room would be at the top of a bank. The exterior wall was high enough off the ground to allow full-size windows and the normal thickness of bricks on the wall. The entrance corridor was long enough to eliminate the risk of scatter through the access door, which was lined with three millimetres of lead to make protection additionally secure. The machine and patient were viewed through a 27 inch water window. One wall of the room was left incomplete until the machine had been brought in, still crated. The installation presented no problem. The machine had to be bolted to the floor and then connected to a 120 volt supply. Connexions from the machine to the control panel were housed in a compound cable, which needed only to be plugged in at each end.

Dr. Holden went on to say that the machine contained in the head 804 curies of cobalt[60] in a spherical source of 1·5 centimetres. That remained stationary in the head, and radiation emerged in one direction when the shutter was hydraulically opened. Field size was regulated by an adjustable lead alloy diaphragm. The size of the field was shown by a reflected light source. The diaphragm was calibrated so that the light source would give the exact field size, according to the scale, when the source-skin distance was 55 centimetres. The treatment table was entirely hand operated, very accurate and light, and linked to the base of the machine by a swivel joint. It could be ingeniously locked, so that it could be pushed to the side but still remain parallel with the axis of the machine. It was rotatable through 360° and would also describe any sector of that arc required. The counterweight also acted as an absorber of the transmitted beam, reducing the amount of protection required on the concrete walls by some 25 inches. The rotation centre was 55 centimetres from the source. Calibration of the apparatus had been excellently carried out by the physics department of the Peter MacCallum Clinic, Melbourne. A preliminary geometrical plan of the radiation beam had been drawn up, which the actual measurements fitted very well. The part of the penumbra which the geometric plan did not reveal was the transmission through the lead alloy diaphragm system. Dr. Holden said that an approximate estimate of that had been made possible by the advice received from Dr. H. J. Ham and Mr. Scott while he was on a visit to the Royal Prince Alfred Hospital.

Dr. Holden went on to say that it was a practical point of great importance that Atomic Energy of Canada had specified that their field size corresponded to the 50% isodose line. In normal X-ray therapeutic practice the field size corresponded to the 90% isodose line. That was most important in the estimation of skin field size to cover a tumour of definite size. If the tumour was a five centimetre sphere, then the field size as defined on the skin would need to be of the order of seven by seven centimetres. It was interesting to note that the linear accelerator field sizes seemed to be defined in the same way, although the isodose contours were closer together than with either standard X rays or cobalt. It was decided that, as the output figures at 55 centimetres' focal skin distance were high enough, 43r per minute fixed field treatments would be given at that focal skin distance, and the isodose contours for various field sizes were drawn up for that distance. Another practical point was that the light source was a reflected one and might not correspond accurately to the radiation beam at all focal skin distances. That problem might not be so serious as was at first thought, since the geometrical diagram that they had made up showed that the arrangement shown was not the correct one. That emphasized that the glossy illustrations of manufacturers should never be taken as gospel truth. During rotation, or when the head of the machine was being moved in any way, the table had to be set at the rotation centre, otherwise the head or absorber might hit it with resultant serious damage as there was no slipping clutch on the "Junior" model. In rotation or arc therapy, there was only some seven to 10 centimetres to spare, so that if the tumour was more than 10 centimetres above the table top 360° rotation was impossible. In arc therapy, the ends of the sectors where the head reversed direction could be unduly irradiated if there was any delay in change of direction. With that machine, the mechanism was so adjusted that there appeared to be no delay at all when direction was being reversed. After careful consideration, it was decided, at the time of calibration, that the problem of rotation therapy could be left for the time being, as it seemed unlikely, with supervoltage, that rotation would be necessary. However, a patient with a carcinoma of the œsophagus, which was early but high enough to make resection difficult, was referred to them in February, and that patient was now being treated. The physicist and technician were able to be present for the first planning session, and also for the first few treatments.

Dr. Holden finally described the treatment of the first seven patients, who were respectively suffering from the following conditions: carcinoma of the bladder with lateral infiltration (the first two patients); tumour involving the right pyriform fossa, without local spread, but with some gland involvement; carcinoma of the cervix in a patient who had some years previously had a Manchester repair and later a subtotal hysterectomy; carcinoma of the cervix, late stage II; carcinoma of the right oro-pharyngeal wall and valecula, with a huge mass of glands in the neck; carcinoma of the bladder, which was full of growth of the papilliferous type that had begun to infiltrate. Dr. Holden said that it was too early for them to have accumulated

experience on the relationship between the physical distribution and stated dose and the clinical results. The immediate impression was that the patients stood the treatment with little upset. There had been no radiation sickness, no skin reactions and negligible mucosal irritation. Those findings alone, when compared with the effects of radical 250 kilovolt X-ray therapy, were very encouraging.

P. M. C. COBLETTE (New South Wales) read a paper entitled "Supervoltage Radiotherapy—The Cobalt Theratron". He said that a cobalt beam therapy apparatus had been installed at Royal Prince Alfred Hospital, Sydney, in December, 1956, and went on to discuss the unit, its methods of use and its advantages over conventional X rays. He considered dosage and biological effect in regard to various tumours, and gave a list of tumours suitable for treatment, as well as the first year's findings.

H. A. S. VAN DEN BRENK (Victoria) said that the various speakers were to be congratulated on their presentation of preliminary work with supervoltage techniques in Australia. To him the initial results were exciting, to say the least. The introduction of supervoltage units for the treatment of malignant disease in several States had created the usual publicity in both the lay Press and medical journals. The expenditure involved had given rise to certain misgivings because of extravagant claims—not those of the radiotherapist—that the new technical advance would substantially improve the cure rate of cancer, previously considered incurable by available methods. Not surprisingly, the material which had been channelled for supervoltage therapy was so selected that no properly controlled results would be obtained to make it possible to assess the cure rate for a given type of tumour. Dr. Van den Brenk said that he thought those present would agree that the case material which had been referred to Dr. Madigan for treatment was deplorable. He went on to say that supervoltage therapy, like conventional radiotherapy, was a regional or local technique, similar to surgery. Unless results were analysed according to the size, site, rate of growth and other malignant characteristics of the growth, comparisons of cure rates were superfluous. The killing power of a tumour, whatever treatment was employed, largely depended on its malignancy and metastatic potentialities. Regional treatments played little part in reversing that process and no reliable therapeutic agent suitable for such generalized disease existed. That radiotherapeutic methods afforded local control and cure of many malignant lesions, at least equal to other disciplines, was now history. In supervoltage therapy a technique was available which would probably substantially improve the cure rate of localized tumours, and which as was already known would improve control and palliation of incurable disease very substantially. That claim was based on the following known facts. Firstly, skin reactions, the limiting factor in high dosage irradiation of tumours, were so reduced as to be almost negligible. Secondly, the uniformity of dosage in soft tissues and adjacent bone, because of the physical characteristics of the radiation, was such that damage to the cellular component of bone was greatly decreased and radionecrosis of bone proportionately reduced. Thirdly, levels of dosage to a tumour-volume, deeply placed, could be greatly increased for a given skin tolerance. Fourthly, the sharp delineation of the beam in certain types of supervoltage equipment reduced damage to normal tissues, and as a result reduced systemic upsets and radiation hazards to gonads and hæmopoietic tissues. In conclusion, as a result of the considerations mentioned, Dr. Van den Brenk said that he would like to express the view that even if supervoltage therapy failed to alter the cure rate of malignant tumours substantially, it was none the less an indispensable tool in modern radio therapy which no self-respecting medical community could deny its patients.

Presacral Oxygen Insufflation in the Investigation of Adrenal Tumours.

H. A. LUKE (Victoria) presented a paper entitled "Presacral Oxygen Insufflation in the Investigation of Adrenal Tumours", the purpose of which was to draw attention to a technique which had originated in Spain in 1948, and which was now accepted as safe and reliable. Dr. Luke said that air injected into the presacral space would pass upwards into the renal fascia to outline the kidneys and adrenal glands on radiographic examination. He described modifications to the usual technique, which were designed to increase the safety, facilitate the examination and reduce the amount of radiation. Those modifications included the following: (i) Injection lateral to the sacro-coccygeal joint, the tip of the needle lying within the hollow of the sacrum in the mid-line. A finger in the rectum guided the needle. (ii) The use of Seldinger's "needle-catheter", which allowed greater freedom of movement of the patient with reduced danger of intravasation or of perforation of the rectum. (iii) Initial injection of saline instead of air, to open up tissue planes and increase the tissue tension, thereby reducing the danger of gas embolism. (iv) The combined use of presacral oxygen insufflation, excretory pyelography and multiplane tomography to increase the value of the investigation and reduce the amount of radiation to the patient. Dr. Luke said that the interpretation of the films could be difficult in inexperienced hands, and illustrated the fact by quoting several mistakes. He also showed films relating to seven recent cases to demonstrate the value of the technique.

COLIN MACDONALD (Victoria) asked how much more dangerous was the method of direct perirenal injection than the presacral method.

Dr. Luke, in reply, said that he thought that the presacral method was safer, but was certainly not without danger.

Radiological Aspects of Congenital Heart Disease.

H. G. HILLER (Victoria) read a paper on "Radiological Aspects of Congenital Heart Disease in the Pædiatric Age Group". He said that in this age group the cardiac contour was variable, and little or no reliance could be placed on it as an aid to diagnosis. Simple cardiac enlargement could of course be demonstrated, and it was sometimes possible to distinguish right from left ventricular enlargement. However, he considered that most information could be obtained from a close examination of the appearance of the pulmonary vasculature and of the aorta.

Dr. Hiller then went on to demonstrate films of the commoner congenital heart lesions but excluding vascular ring lesions. Occasional angiocardiographic and cardiac catheterization studies were shown where those helped in the interpretation of the straight films. He dealt first with those conditions in which a study of the aorta might be helpful. In cases of valvular aortic stenosis the prominence and excessive pulsation of the ascending aorta, due to the post-stenotic dilatation of the vessel, might be a diagnostic feature. In cases of coarctation of the aorta rib-notching was uncommon before the age of 10 years, but absence of the aortic knuckle might be a guide, and an even more important sign was an indentation of the descending aorta at the coarctation site.

Turning to consider the pulmonary artery and its branches, he pointed out that there was a group of conditions in which a left-to-right shunt produced a similar picture of enlargement of the pulmonary artery with engaged branches. The conditions included atrial and ventricular septal defects, patent *ductus arteriosus*, and partial anomalous pulmonary venous return. On screening, marked pulsation of the pulmonary arterial branches could often be seen, especially in the case of the septal defects. It was virtually impossible to distinguish between the conditions radiographically. In cases of partial anomalous venous return, cardiac catheterization was necessary to establish the diagnosis. If pulmonary hypertension developed in any of these conditions the radiological picture changed, with diminution in the vascular markings of the peripheral lung fields, and some tortuosity and further enlargement of the larger branches. A similar picture was seen in the Eisenmerger complex and in transposition of the great vessels, but in those conditions antero-posterior films showed a narrow base to the heart compared with the wide base seen in oblique views. The appearances were well demonstrated by angiocardiography.

In cases of valvular pulmonary stenosis the opposite appearances might be expected, but there too the main pulmonary artery was dilated, because of post-stenotic dilatation, but the main branches were as a rule normal in appearance. Cardiac enlargement in cases of pulmonary stenosis could be demonstrated only when failure was imminent.

Patients with the tetrad of Fallot and with infundibular pulmonary stenosis also showed normal lung fields, and as the stenosis was infundibular, there was no post-stenotic dilatation of the pulmonary artery to be seen, the main pulmonary artery appearing narrowed. Radiographs of patients with these conditions usually appeared virtually normal, but might show the characteristic boot-shaped heart, or the appearance of a right aortic arch. In cases of pseudotruncus (ducto-pulmonary atresia) there was a distinctive appearance due to the absence of the main pulmonary artery with moderate congestion in the lung fields. About 70% of patients had a right aortic arch as well.

Finally, in cases of complete anomalous pulmonary venous return, the appearance of the so-called left vertical vein to the left of the superior mediastinum, combined with the dilated superior *vena cava* shadow to the right, produced a picture characteristic of the condition.

L. COHEN (N.S.W.) congratulated Dr. Hiller on the cardioangiograms. He said that he saw "notching" of the ribs in patients at the age of four years in cases of coarctation of the aorta. The absence of radiological signs was not significant in coarctation if the clinical signs were present.

M. G. F. DONNAN (W.A.) asked what was the indication for angiocardiography.

Dr. Hiller, in reply, said that angiocardiography was restricted to cases of cyanotic disease if there was a chance of performing a corrective operation. No angiocardiograms were prepared in the presence of acyanotic lesions. In cases of coarctation of the aorta it was scarcely ever necessary.

Dr. W. P. Holman said that there was a problem of economics there. It seemed likely that only a small proportion of patients needing radiotherapy could not be best treated by either super-voltage or superficial X-ray equipment. For example, he felt that a second linear accelerator would be a great asset in their own hospital, but they must take account of what appeared to be possible at a given time and place. In the meantime, it was necessary to arrange for the best use of the equipment they had. The physical properties of "super-voltage" made possible a new precision of delivery of dose at a depth; skin reactions were of no concern, but tolerance of normal viscera was their new limitation. That called for detailed planning of beam direction as a preliminary to treatment. They had to strike a balance between time which ought to be spent in this way, by radiotherapists and practical medical physicists, and what they believed to be a reasonable total number of people being treated with only one piece of equipment. It had become clear that this meant skilful and sensible work by a team.

Section of Rehabilitation and Physical Medicine.

President: R. F. May, B.Sc., M.B., B.S., D.M.R. & E., Victoria.

Vice-Presidents: L. G. Male, E.D., M.B., B.S., South Australia; G. A. McLean, M.B., Ch.M., Queensland; M. Naomi Wing, M.B., B.S., New South Wales; E. David McIntyre, M.B., B.S., F.R.C.S., F.R.C.S.E., Tasmania.

Honorary Secretary: P. S Clarke, M.B., B.S., L.M.S.S.A., Tasmania.

Historical Considerations in Rehabilitation.

R. F. MAY (Victoria) in his presidential address briefly discussed the history and development of the specialty of rehabilitation and physical medicine. He said that the first World War had established physical therapy as a valuable ancillary medical service, the second had developed rehabilitation. Subsequently the social services in most countries had brought rehabilitation to its present high standard of efficiency. As specialists in physical medicine they embraced a wide field of work in the treatment of physical and locomotor ailments. Particularly in England there was evidence that it included the treatment of rheumatic disease and that of rehabilitation generally. The Ministry of Health in the United Kingdom appeared to hold that the departments should embrace both rheumatic disease and physical therapy, many having associated partial and full rehabilitation services. In other countries the services were largely in rehabilitation. Dr. May said that in 1932 he had seen many departments for heliotherapy, ultra-violet light and colonic lavage, etc., and pyretotherapy or fever therapy was becoming established, as also was short-wave therapy, which for a time was viewed with scepticism. Even now there were those, who should know better, who belittled the method and opined that the attractiveness of the young female physiotherapist was of major importance. If one wished to learn, where would one now see some of the methods mentioned? And where would one see the effective treatment of hay fever by the local application of ultra-violet light to the nose or by zinc ionization? Admittedly, one must be critical of any method of treatment. Diseases had a natural course; a good example was the common cold.

Dr. May said that particularly in their work, attention should be drawn to acute low back disturbance. The so-called "slipped disk" had crept into the Press and common talk. Many low back pains were due to disk disturbance, many were due to strains of apophyseal joints, or of ligaments and/or muscles. Some were the result of some fibrous tissue reaction, so-called "fibrositis", such as occurred in gouty subjects as a result of chill and exposure and during infections, both acute and chronic. The giving of almost any form of heat, aspirin and bed rest aided the natural course of those disabilities. It was only reasonable that whatever was or was not done got the credit. To him it appeared that the most important was rest. If the patient could be induced to remain at complete bed rest, many if not most intervertebral disk disturbances would subside, as would all the other low back disabilities. The giving of physiotherapy, therefore, in many cases was unnecessary and in some cases was positively harmful.

Dr. May went on to say that in many ways they had made great strides; but they should not forget that the old remedies were often measures of great value. Though specialists, they were really physicians, and as such they must remember that the practice of medicine was still an art. That applied chiefly to diagnosis and to their approach to the patient and his problem; but therapeutics,

as Professor Lovell had said, was being recognised for what it was—an experimental science. During the last half century great discoveries had led to elimination and prevention of disease. The discovery of bacteria and antisepsis led to the great development of surgery. Vaccination had helped to eliminate smallpox, antitoxins to control tenanus and diphtheria. Then came the advent of drugs, of antibiotics, and later still measures to deal with such viral diseases as poliomyelitis. By such discoveries great results had been achieved. However, there were many public health measures which had been equally successful—for example sewerage, antimalarial precautions and mass radiography. There had been great campaigns, supported by both private and government bodies, against tuberculosis, poliomyelitis, cancer and mental disease. Those campaigns were very necessary and had achieved much in the way of help to the sufferers from such diseases. Recently a great benefactor had contributed a considerable fortune to research in ophthalmology. Turning to rheumatoid arthritis, Dr. May said that 7,500,000 Americans were stated to suffer from rheumatic disease; in America it ranked first in incidence and second in disability. That probably meant that about 500,000 Australians suffered from one or other of the various forms of the disease. It caused a great loss of man hours *per annum* to the nation, probably in the region of 5,000,000, with a corresponding high cost to the nation. The disease was not a killer like cancer, but was one which caused untold suffering in both degree and duration. How many beds were made available for rheumatic disease as compared with tuberculosis, cancer or mental disease? The cost of medical care of rheumatoid arthritis patients had risen enormously since the discovery of such efficacious but nevertheless expensive drugs as cortisone, "Butazolidin", "Chloroquine", etc. It should be recognized in Australia as in other countries that rheumatic disease appeared as a most important social, economic and medical problem. In the past no disease had been more neglected, and even now in Australia there was no real appreciation of the problem. No better object could be found for benefactions and public governmental aid. The sympathy of all should be extended to those in need. The aims should be money for research and for material aid for those distressed, voluntary help for home assistance, for transport and entertainment, and the establishment of special clinics, special hospitals and special laboratories. All that was part of the aims of the Empire Rheumatism Council, but up to date it had received very little publicity. Dr. May in conclusion urged those present to go away from the meeting with a firm resolve to start a campaign against rheumatic disease in every State, to enlist public support, and to make some contribution to that most urgent, deserving and neglected cause.

Ultrasonic Therapy.

L. T. WEDLICK (Victoria), introducing a paper on "Ultrasonic Therapy", remarked on the widely divergent views as to the efficacy of that form of treatment. It was regarded with enthusiasm in Continental countries and in some American centres, while it had been almost discarded in Great Britain. His own view was that it had something to offer, but that the erratic results obtained indicated the need for further research in that field. Dr. Wedlick stated that the frequency commonly employed was 800 kilocycles per second, though a frequency of 3000 kilocycles per second was occasionally used. Unlike audible sound, ultrasound was transmitted as a direct beam, so that local effects on the body were confined to the path of that beam. Also, ultra-sound was completely absorbed by even a thin film of air, so that it was necessary to apply the source of ultra-sound directly to the patient's body. The effects on the body were: (i) the production of heat, although the distribution was unique, being concentrated at tissue interfaces and facial interplanes; (ii) an increase in tissue permeability; (iii) a spasmolytic and analgesic effect, perhaps due to selective heating of perineural tissues. After rejecting cases in which the diagnosis was open to question, and those in which ultrasonic therapy was combined with other forms, 150 cases were selected for study. A frequency of 800 kilocycles per second was used in all cases. The dosage used ranged from 0·8 watt to two watts per square centimetre, and the time of exposure from four to 12 minutes. Dr. Wedlick emphasized that in his series treatment was for local conditions only. He presented a table giving the results in the various conditions treated. This showed that patients with osteoarthritis seldom responded to that form of therapy, while those with sprained ligaments generally did well. The results in cases of tennis elbow were poor. In general, Dr. Wedlick concluded that the results of the treatment were erratic, but it did sometimes succeed where other physical methods had failed. It was regarded as a form of heat treatment, in which heat was concentrated at the fascial interplanes; this conclusion was supported by the fact that best results were achieved in the treatment of tendinitis, tenosynovitis, and ligament sprains. Arthritis was not relieved, unless there was some associated soft tissue lesion. Ultrasonic treatment was outstandingly successful in cases of fibrositis of the neck and shoulders associated with cervico-brachial neuralgia, perhaps from selective heating of perineural tissues. Patients who responded to treatment showed improvement early, usually after four to six treatments. For that reason and because of erratic results Dr. Wedlick tended to keep ultrasonic therapy for patients who were not responding to other physical methods, or to use it for short-term trials. It was, however, often found very useful in combination with other forms of heat therapy.

W. GORDON RICH (New Zealand), in opening the discussion, referred to the immense amount of research work done in Germany, both clinical and experimental, and to the clinical research carried out in America. Dr. Rich agreed that the biological effects of ultrasonic therapy were thermal, mechanical and chemical; but he said that the neural effect had not been sufficiently stressed. Patients receiving treatment might become excessively fatigued and might even develop slight cardiac irregularity, which settled down with a reduction in dosage or with temporary suspension of treatment. Dr. Rich said that in his opinion the results of treatment of cervical spondylosis mentioned by Dr. Wedlick were disappointing, and not in line with reports from Dr. John Alder, who had achieved a relief rate of 90% in arthrosis of the spine. He himself had analysed 119 cases of arthrosis involving the cervical, dorsal and lumbar parts of the spine with associated radicular pain, in which the relief rate was 96%. In his experience, too, better results had been obtained in arthritis of the hip and knee than had been reported in Dr. Wedlick's paper. Dr. Rich finally said that the last had by no means been heard of ultrasonic therapy, which was being used in a number of other fields such as Ménière's disease and leucotomy.

M. NAOMI WING (New South Wales) said that when she had sought opinions on the subject in many parts of the world, she also had found a very varying use of the method. At the clinic where she worked, they had found that ultrasonic therapy under water, followed by wax baths with the hand in elevation, was an excellent form of therapy for Sudek's atrophy, whether it was associated with a frozen shoulder or was of traumatic origin.

SELWYN NELSON (New South Wales) said that ultrasonic therapy had been found of variable usefulness. Sometimes in the treatment of a painful back in a patient with ankylosing spondylitis after the limit dose of deep X-ray therapy had been given, ultrasonic therapy was of value. Dr. Nelson quoted a case in which a persistent deep chronic ulcer of the heel following a pressure sore had healed after the use of ultrasonic therapy. He said that the wall of the ulcer was of dense fibrous tissue, which had been shed after the ultrasonic treatment.

Ectopic Calcification.

R. W. THOMPSON (New South Wales) read a paper entitled "Non-Visceral or Ectopic Calcification". He said that approximately half the normal amount of calcium in the blood was protein bound and invariable. The

remainder varied with the calcium intake, the vitamin *D* intake and the state of the parathyroid glands. The close relationship of calcium with phosphorus meant that disturbance in the metabolism of the latter mineral would have exactly similar clinical results. Dr. Thompson went on to say that ectopic calcification might be classified under six headings. The first was physiological calcification, which was seen as part of the normal progress of aging. The second was pathological calcification, which might be (*a*) vascular, exemplified by Volkmann's ischæmic contracture, (*b*) neurogenic—for example, that occurring in the region of the hip joint in traumatic paraplegia—or (*c*) inflammatory. Inflammatory calcification also might be of one of four types: new bone formation in relation to septic joints; calcification in relation to such conditions as "tennis thumb", "writer's cramp" or capsulitis of the shoulder; calcification in relation to tuberculous joints (chronic inflammation); calcification relating to rheumatoid arthritis. Dr. Thompson discussed in considerable detail the innocent but incapacitating calcifications that commonly occurred in relation to the shoulder joint, the elbow joint and the tendons of the arm, and pointed out that there was a lack of understanding of those conditions. The third type of calcification was degenerative—for example, that occurring in relation to osteoarthritic joints. The fourth type was traumatic calcification; calcium deposits, often going on to complete bone formation, were apt to occur in relation to fractures involving joints, especially the elbow joint in children. Such calcifications could probably be equally well placed with the vascular insufficiencies. The fifth type was ectopic calcification in von Recklinghausen's disease of bone (*osteitis fibrosa cystica*). The sixth type comprised the idiopathic calcifications—calcinosis, *myositis ossificans progressiva* and dermatomyositis. Dr. Thompson said that there was no need to treat a calcium deposit; there was, however, urgent need to treat a severely painful shoulder with or without a calcium deposit. The natural history of that condition was of about 18 months' duration, the painful shoulder during that period losing its pain and becoming frozen, after which movement gradually returned. The sequelæ might be atrophic, contracted muscles, a shrunken joint capsule, ligamentary shortening and periarticular adhesions—a disuse atrophy, not the result of the disease process itself. Dr. Thompson outlined the modern treatment of the condition. He briefly discussed the other forms of calcification mentioned, and illustrated his paper by showing X-ray films of all the conditions discussed.

L. T. WEDLICK (Victoria), in opening the discussion, said that Dr. Thompson had pointed out that calcification itself might be symptomless and need no treatment. X-ray evidence of calcification did not necessarily mean that that was the cause of symptoms. However, calcification was often associated with other inflammatory states, which might precede the calcification. Examples were traumatic *myositis ossificans*, Pellegrini-Stieda syndrome, and ossification in bursæ and tendons. Weaver's bottom with calcification was uncommon; but of particular importance was the calcification seen at the shoulder in tendon or bursa. It was often difficult to be sure whether it was in tendon or bursa; but the size and shape of the area of calcification would sometimes assist in the diagnosis. Calcification in tendon and bursa with acute inflammatory changes might cause an acute condition of the shoulder necessitating rest for a week or so until the acuteness subsided. In less acute cases it caused a "catch pain", and treatment with hydrocortone might often give dramatic results. Dr. Wedlick went on to say that calcification seen in the true frozen shoulder with adhesions played little part in the symptomatology, except that it indicated that the original lesion might have been in tendon or bursa. In many cases short-wave or X-ray therapy would produce resolution of the calcification. That seemed desirable, particularly in bursitis, in which the calcified area might act as a foreign body causing recurrent attacks. However, it was of interest that calcification might recur.

MICHAEL KELLY (Victoria) said that he agreed with Dr. Thompson that calcification around the shoulder or hip joint had not much relation to the serum calcium level. It was a local change due to local inflammation. He agreed also that treatment should not be directed at the calcified tissue when a shoulder of that type became painful. Twenty years previously in the U.S.A., Bosworth had radiologically examined 12,000 shoulders in the general population, and had found in 2% or 3% calcification without any symptoms. Surgical measures directed at the removal of the calcium were therefore not likely of themselves to relieve the pain. There was very little clinical difference between calcifying and non-calcifying tendinitis; but a shoulder which showed calcification was more likely to become painful than one without, because calcification was a sign of degeneration.

R. G. ROBINSON (New South Wales) said that he regretted the lack of discussion of the intimate biochemistry of calcium and phosphorus deposition. Analysis of the deposits would show that phosphorus metabolism was the constant feature, and that the calcium, probably combined with protein or fatty acids in an alkaline medium, was added only secondarily and haphazardly. As the condition improved towards normality, the phosphorus content fell; but there was no fixed relation to calcium levels.

SELWYN NELSON (New South Wales) drew attention to the fact that the deposition of radio-opaque matter in dermatomyositis and scleroderma depended essentially on local biochemical change in calcium and phosphate concentration, with the production of local conditions favourable to the deposition of calcium phosphate.

Treatment of Paraplegia in a Rehabilitation Centre.

G. A. MCLEAN (Queensland) read a paper entitled "Treatment of Paraplegia in a Rehabilitation Centre". He discussed the treatment of 13 selected patients with paraplegia admitted to the Rehabilitation Centre in Queensland, which differed from a paraplegic unit in that it was dependent for orthopædic and urological services on public hospitals. Dr. McLean said that the rehabilitation service had a remedial and vocational goal. All the patients had recovered their self-sufficiency in such daily living activities as dressing, feeding and self-care, and had received adequate hospital physiotherapy to control contractures and develop good arm and shoulder musculature. The remedial work at the centre achieved a reasonable restoration of function in walking by a long programme of individual and group supervision. In the group work the patients were mixed, and competed with those with other types of paraplegia or severe weakness of the legs. In games they were mixed with all types. That procedure had produced great psychological improvement in increased confidence, as well as in speed and endurance. In the late remedial phase, the patients learnt more from each other than from the physiotherapy instructors. Dr. McLean pointed out that that was an index of the powers of staff leadership. He went on to say that a good deal of time had been lost in the early remedial phases in adjusting braces, calipers and crutches to suit the changes in weight-bearing in activity of the programme. That was not an unusual experience in the fitting of prostheses for amputees and of surgical aids for the paralysis due to poliomyelitis. However, during that period, sessions of educational therapy were included in the remedial programme, when basic English and arithmetic revision was undertaken, and correspondence courses were supervised by the tutor. Regular periods of study produced good work habits after long periods of inaction in hospital. The centre had no splint shop, and patients had been transported at least five miles to the nearest Repatriation Department splint factory. Only three of the employed patients were using wheel-chairs. They mostly used their chairs to go to and from work, because no motor-car transport was available. In view of the vocational goal, only clerical prevocational assessment had been developed at the centre. The education officer had used the tutor service in basic subjects to check the potential of the rehabilitation patients for study. The occupational therapy department had facilities for testing skill and concentration in routine bench work in such occupations as boot-repairing, veneer-matching and sheet metal work. However, it was not possible to be

employed as a boot-repairer unless an apprenticeship had been served. A man of exceptional talents might, on the other hand, succeed as a self-employed jobber. Dr. McLean said that there were no opportunities for work in an adult shelter workshop in Queensland. There was no doubt that sheltered employment at piece rates would provide an excellent work incentive. Dr. McLean then referred to the question of eligibility for rehabilitation. He said that of the 13 selected patients who had been considered and accepted for either a remedial or a vocational objective, six were employed, two had jobs in view, two were delayed in the remedial phase (one because of urinary infection and one because of bed sores), and two others might not succeed in employment because of lack of transport. In the future, urinary infection, extensive bed sores and low intelligence quotient might be the chief factors operating against eligibility. It was thought that immobility and lack of housing and transport might be overcome by realistic rehabilitation.

COLIN ANDERSON (Western Australia), in opening the discussion, said that Dr. McLean had spoken of one of the many facets of paraplegia. In the smaller States, the treatment of paraplegics could present difficulties. The rehabilitation centres had been set up in some cases by adaptation of existing buildings, and toilet facilities, for example, had not been designed for the use of paraplegics. The other problem was a human problem—the absorption of the paraplegic into the population of the centre. In some cases the paraplegic had not even been thinking about his future, and the rehabilitation centre was a rather bewildering world. The treatment at the centre, if it was to be effective, was mainly the "team" approach—and the team approach had to be at its best. It was still difficult to make the treatment team appreciate the profound effect of the occurrence of paraplegia on the average breadwinner or housewife. As a generalization it could be said that the majority of paraplegics were within the average breadwinner class, and were manual workers. In cases of paraplegia apparently successful results were coupled with those regarded as abysmal failures. However, in Western Australia they had reached the turn of the wheel, where several paraplegics, who had been discharged for disciplinary reasons, had requested readmission, and in one case, there seemed to be some hope.

Dr. Anderson went on to say that, as in all rehabilitation treatments, it was axiomatic that rehabilitation of a paraplegic was not successful until he had been satisfactorily placed in employment and was acceptable to the employer. With the increase in the number of such cases, the economic factor was becoming important. He had been informed that the maintenance of paraplegics in annexes to hospitals cost approximately £30 per week. Thus suitable employment was a definite economic goal, as well as a definite social responsibility, which was the more important. Dr. Anderson congratulated Dr. McLean on the number of patients who had been placed in employment.

GEORGE BURNISTON (Victoria) said that Dr. McLean's paper had emphasized some important problems met with in the rehabilitation of a paraplegic, and had indicated practical measures to meet them. Dr. Burniston agreed with the remarks of both Dr. McLean and Dr. Parker relating to the imperative need for enlightened team work, which was especially necessary in that period when neurological and urological problems predominated. The team work involved close consultation and cooperation of physicians and surgeons, as well as of the nurse, the various therapists and the patient himself. Dr. Burniston considered that, as in the treatment of all severe and long-term disabilities, members of the team must be dedicated, as Dr. Parker had said; but most of all, the physician or surgeon in charge must be especially dedicated. One had only to recall the outstanding contribution in the rehabilitation of paraplegics made by Ludwig Guttmann, Allan Jousse and other to recognize the quality of dedication. Dr. Burniston said that he recognized the need for special centres for the early treatment of paraplegics, where trained staff and facilities could be gathered to meet the urgent surgical needs of the unfortunate patients, and to anticipate and prevent the possible resulting complications. However, he considered it important that as soon as possible paraplegics should complete their physical rehabilitation in the company of others disabled from other causes. They should also be encouraged to participate in the normal social activities of the normal community. Emphasis on forming paraplegic clubs and basket-ball teams, sports gatherings for paraplegics, etc., while undoubtedly drawing public attention to the problem of the paraplegic, might nevertheless tend to isolate the paraplegic in the community.

F. K. WALLACE (Victoria) said that he agreed with the comments of Dr. Anderson and Dr. Parker. Stress had been placed on the necessary dedication of the nursing staff and physiotherapist in the care of paraplegics. Although the doctor had not the active part to play in the treatment, his dedication and interest was most important. That had been demonstrated at the Repatriation General Hospital, Heidelberg, in the period 1948-1950, when the Assistant Medical Superintendent had personally supervised the treatment and care of paraplegics, mainly because the resident medical officers were not particularly interested in cases of that type. Dr. McLean's stressing of the team cooperation and staff cooperation was a message that should be widely spread.

Rehabilitation of the Hemiplegic.

M. NAOMI WING (New South Wales) read a paper entitled "Rehabilitation of the Hemiplegic". She first stressed the change from an impression of hopelessness and despair to one of hope and cheerfulnes for victims of a cerebral catastrophe, brought about by the new approach through rehabilitation techniques. She said that an important point was the need for early reference of patients, so that rehabiliation measures might be started from the first hours of the patient's illness or accident, and might continue until he had recovered to the greatest degree of usefulness compatible with his abilities and disabilities. Discussing the basic functions of the rehabilitation organization, Dr. Wing said that they were (i) evaluation of the patient's condition, (ii) prevention of deformity, (iii) prevention of needless progression of the disability, and (iv) placement and maintenance of the patient. All should be subject to review at regular intervals, with consequent changes in goals and management. The care of the hemiplegic was now a problem for the team, each member of which had a specific part to play in the psychological retraining of the patient. The team members were: (i) the physician, who made a careful diagnosis of the ætiology of the lesion, and gave detailed instructions to the other members of the team; (ii) the nurse, whose attitude had to be one of hopefulness and kindness; (iii) the physiotherapist, who should be called in during the first two days, and who would teach the nursing staff and assist the physician to institute the prophylactic measures; (iv) the occupational therapist, who would work with the physiotherapist, translating the prophylactic measures into interesting pursuits; (v) the speech therapist, who would commence her task as soon as the patient was able to understand her instructions; (vi) the social worker, who assisted the relatives, helped all members of the team to arrange their goals according to the patient's general situation, and organized any adjustments necessary to the patient's home environment; (vii) the vocational officer, who was called in to test aptitudes and assess goals; (viii) the placement officer, to deal with the disposal of the patient. Dr. Wing discussed in detail modern research and the lessons to be learnt from it, and the modern techniques of rehabilitation which were based on those lessons. She also described early prophylactic measures. In conclusion, Dr. Wing said that if the future of the patient was viewed under the four headings which she had first outlined, a satisfactory programme of therapy could be worked out under the guidance of the team. In the U.S.A. it had been estimated that 90% of all patients with cerebro-vascular disease could be trained to walk and to take care of themselves,

SELWYN NELSON (New South Wales) asked Dr. Wing to comment in more detail on the rehabilitation of the patient with hemiplegia following embolism. He said that in his experience such patients often had severe cerebral damage, and of course there was the problem of the cardiac lesion—mitral stenosis with auricular fibrillation. That also determined the degree to which rehabilitation could lead to reemployment, and tended to offset the absence of other cerebral damage.

L. T. WEDLICK (Victoria) stressed the tremendous sense of frustration felt by the hemiplegic who could not write or speak, and had no means of communicating with the outside world. Even if it was not possible to "teach" speech recovery, and if left-hand writing became impossible, it was possible still to fall back on a simple hand splint to permit of writing. Early speech therapy was obviously of vital importance.

Serum Mucoproteins in Rheumatoid Arthritis.

R. G. ROBINSON (New South Wales) read a paper entitled "Serum Mucoproteins in Rheumatoid Arthritis", based on chemical and electrophoretic studies of the serum of a number of patients suffering from rheumatoid disease in all phases, both in the natural state and under the influence of various forms of treatment. He said that attempts had been made to relate the changes found to the clinical condition, to the type of disease, to the erythrocyte sedimentation rate, to the progress or retrogression of the disease and to the reaction of the host to the disease. Chemical analysis and flocculation tests had soon been discarded as being too unreliable, and investigation proceeded with the use of electrophoretic methods, to ascertain their value as a diagnostic and prognostic tool. Dr. Robinson discussed the investigation in detail, and stated his conclusions in the following terms. From serum electrophoretograms, an increase in serum muco-proteins was demonstrable as a consistent feature of rheumatoid disease activity. A more specific and more accurate measurement was obtained by estimating in the serum the level of sialic acid, a breakdown product of mucoprotein. The results of that test, and their relation to the erythrocyte sedimentation rate and to activity of the disease, suggested that clinical activity might occur in two forms according to the pattern and stage of the disease. The first was a general inflammatory reaction and the second a more local synovial reaction. The latter might be of the nature of an allergy or auto-sensitization. Dr. Robinson had the impression that salicylates were more effective in the second group. He went on to say that with effective therapy, the level of sialic acid fell along a course parallel with that of the erythrocyte sedimentation rate. He pointed out the value of the sialic acid test, which could not replace the estimation of the erythrocyte sedimentation rate, but afforded an interesting study of the effects on the host of the reaction to the rheumatoid process.

GORDON RICH (New Zealand) referred to work being done in San Francisco. He said that in 1956 a graph was being made by one worker of the serum albumin-globulin ratio in all his cases.

MICHAEL KELLY (Victoria) said that he was interested in Dr. Robinson's remarks about the erythrocyte sedimentation rate, the estimation of which was a purely empirical test. Actually it was a measure of the viscosity of the serum, and why it should be related to the amount of inflammation in the body was unknown. The erythrocyte sedimentation test had originally been introduced as a measure of activity in pulmonary tuberculosis, but it had been abandoned when workers 20 years earlier had shown that, by every known method of estimation of the erythrocyte sedimentation rate, the level was not accurately related to the clinical activity of the lesions.

Dr. Robinson, in reply, said that in adult rheumatoid arthritis following rheumatic fever one would expect a rise in the beta globulin content of the serum. He regarded as psychogenic, cases of rheumatoid arthritis in which the disease appeared to be precipitated and aggravated by psychological stresses. In reply to Dr. Rich, Dr. Robinson said that estimation of the albumin-globulin ratio was a poor method of investigation. In reply to another speaker, Dr. Robinson said that he agreed that the erythrocyte sedimentation rate was a poor yardstick, unless it was appreciably raised, when it might be used both diagnostically and prognostically. To a further speaker, Dr. Robinson said that he hoped he was measuring an increase in body proteins liberated into the general circulation as a result of local inflammatory changes. Dr. Robinson further said that C-reactive protein was non-specific. In reply to Dr. Kelly, Dr. Robinson said that it was not decided that the erythrocyte sedimentation rate was a measure of viscosity, and the use of fibrinolysin appeared to substantiate that.

Dr. Robinson went on to say that the tendency to regard rheumatoid arthritis as one disease was at the root of failure to arrive at any positive observations or conclusions on the ætiological and provocative factors. The need for basic studies was vital if the treatment was to emerge from an empirical hotchpotch of palliation. A certain proportion of patients would respond to any form of therapy, and they provided the basis for extravagant claims for individual therapies. At the same time, it was important to differentiate between causal factors and disordered host reaction. While his study did nothing to evaluate the former, perhaps disordered host reaction differed somewhat according to the antigen or other ætiological factors concerned. Closer studies of possible factors relating to altered host metabolism might produce some interesting syndromes, providing the answer to the pleomorphic syndromes which were collected under the heading of rheumatoid disease.

Pain in the Foot.

In a paper entitled "Some Aspects of Pain felt in the Foot", J. F. DREW (South Australia) discussed two common painful foot conditions. The first of these was pain felt in the forefoot associated with tenderness of the second metatarso-phalangeal joint in the absence of generalized arthritic disease. He pointed out that in approximately 50% of individuals the second metatarsal was as long as, or longer than, the first, and that whether short or long, the head of the second metatarsal accepted an important proportion of the take-off weight in normal walking. While most individuals with long second metatarsals did not experience any inconvenience, a majority of patients with pain in the forefoot fell into this category. Other contributing factors suggested were age, impaired muscular control, and stresses caused by high heels and a steeply inclined foot. Pain could be relieved by wearing cork insoles, three-sixteenths of an inch thick, notched so as to leave a well under the head of the second metatarsal, thus eliminating any pressure at this joint.

The second condition discussed by Dr. Drew was pain in the heel, usually associated with a tender spot either on the medial side of the plantar aspect of the calcaneus directly below the medial malleolus, or at the inner and upper aspect of the insertion of the *tendo Achillis*. He pointed out that the former spot corresponded to the calcaneal attachment of the plantar fascia, and that tenderness there was frequently associated with a calcaneal spur. Calcification in the neighbourhood of any ligamentous attachment to bone was regarded as evidence of periostitis—in this case caused by undue tension due to partial failure of other supporting structures. The calcaneal spur was therefore a product of an underlying pathological condition, and removal of the spur would not influence the underlying nerve. The nature of the pain, its periodicity and the associated raised erythrocyte sedimentation rate which was frequently found suggested an inflammatory basis.

Dr. Drew then referred to a type of organism known as the "L" form which had been extensively investigated by Professor Brown of Washington University. He believed the organisms to be an ætiological factor in rheumatoid disease. They were filter-passing, intracellular organisms, differing from true viruses in their ability to propagate

themselves on artificial media, and were considered to be transitional forms of common pathological bacteria, developed in response to an unfavourable environment. It had been shown that under experimental conditions beta hæmolytic streptococci could be induced to revert to an "L" form, and it was postulated that this might occur in an inflammatory focus where the defence mechanism was gaining ground. *In vitro* "L" forms had been shown to be sensitive to "Terramycin", "Achromycin", gold, and anti-malarial drugs; but owing to their intracellular habitat, their treatment *in vivo* was unpredictable. Dr. Drew suggested that these minute organisms, which were relatively immune to the natural defence mechanisms, might be circulated in the blood-stream, and would tend to settle in tissues traumatized by any cause. The invasion might result in an inflammatory reaction. This mechanism offered an explanation of the relationship between the toxic focus and non-specific inflammatory disease of bones, ligaments and related tissues. Dr. Drew said that in a large series of male patients with ankylosing spondylitis Romanus had demonstrated chronic prostato-vesiculitis in some 70% of cases; there was a high proportion of painful heels associated with calcaneal spurs in this series. Further, "L" forms had frequently been recovered from the uro-genital tract in cases of Reiter's syndrome.

Dr. Drew based his treatment of the condition on physical aids to relieve strain on the ligamentous insertions involved, thus minimizing trauma, on elimination of septic foci and on attempts to combat the "L" form organisms. For the last, he suggested small doses of "Terramycin" or "Achromycin" every fifth day, or antimalarial drugs such as "Nivaquin" or "Amodiaquine".

Dr. Drew quoted the case of a woman, aged 28 years, who had had an initial attack of pain in her right heel treated surgically, with temporary improvement, followed a few months later by widespread arthritic manifestations.

R. G. ROBINSON (New South Wales) said that X-ray films must be read in relation to the type of foot. The first metatarsal would appear shorter in a cavus deformity. Dr. Robinson mentioned the pain of intractable type that might result from osteitis of the sesamoid bones under the first metatarso-phalangeal joint. With regard to "L" forms, he said that their production from organisms was the result of unfavourable chemical environment—for example, the presence of penicillin, high dilution and a high titre of antibody. The laboratory results were of interest when they were related to the clinical condition and the clinical history. With the streptococcus, when the antibody titre was raised to a certain point the "L" form grew. That situation obtained in rheumatic fever. At that point, in the body, rheumatic fever supervened. The same might hold with other organisms and with other foci.

MICHAEL KELLY (Victoria) said that Dr. Drew had presented an important study of the foot, which illustrated how necessary was a careful examination of the painful spots by palpation. In patients with rheumatoid arthritis suffering from metatarsal pain, the second metatarsal joint was commonly tender and the other joints were not However, in other cases, the third or fourth metatarsal joint might be the only tender one. Dr. Kelly said that he was interested in the suggestion that a localized lesion in a painful foot might have the same pathological basis as in rheumatoid arthritis.

Rehabilitation of Amputees.

L. G. MALE (South Australia) read a paper on the rehabilitation of amputees. He said that the process was not simple. The fitting and the training in use of an artificial limb were the responsibility of the operating surgeon. Cooperation and consultation between the surgeon and the limb-maker were essential. Dr. Male referred to the psychological trauma sustained by the patient who had lost a limb, and said that it should be distinguished from the gross mental deterioration seen in cases in which the amputation was made necessary by vascular disease. Difficulty in and obstruction to the use of a prosthesis were to be expected in such cases, especially when double amputations had been performed. Some patients with severe cerebro-vascular degeneration might be best considered for a wheel-chair existence. When an amputation was necessary, if time permitted, the patient should receive some explanation, to lessen the post-traumatic load. Dr. Male then discussed the presentation of amputation stumps, which he said in many instances left much to be desired. The main faults were (i) flexion, (ii) inadequate shrinkage, (iii) adherent scar, (iv) misplaced scar, (v) pressure areas resulting from sepsis, (vi) stump too long, resulting in piston action, particularly in the event of suction socket, (vii) stump too short. Careful planning of the amputation stump was desirable, with attention to the patient's occupation. Dr. Male also said that too much effort might be expended in trying to save a seriously injured limb, when the patient would be better off with a satisfactory prosthesis. In upper limb amputations, one of the commonest faults was unrecognized injury to another joint. Ill-advised attempts might be made to fix a shoulder joint for the relief of pain or on account of a short stump. Another occasional difficulty was an orthopædic abnormality existing in the unamputated leg, which might lead to discrepancy in the fitting of a prosthesis. Dr. Male then discussed the advantages of the early use of the pylon in lower limb amputations, and mentioned ways in which the objections to its use could be met. With regard to the time factor in limb fitting, Dr. Male said that an essential in the rehabilitation of the amputee was that his prosthesis should be provided as expeditiously as all circumstances permitted. He forecast some future developments in limb-fitting which would reduce the time lag, and made a plea for a closer application in suitable cases of the "Cineplastic" motor for upper-arm prostheses. Dr. Male concluded his paper by discussing the requirements for an ideal stump and methods by which they could be met, and stressed the importance of maintaining a healthy integument over the stump.

The Limb-Fitting Team.

R. W. KLEIN (Victoria) read a paper entitled "The Limb-Fitting Team; Artificial Arms and the Techniques of Above-Knee Fitting". He said that the outlook for the amputee had been greatly improved in Great Britain and the U.S.A. by the realization that rehabilitation must consider two factors: (i) the amputee's attitude and ability to cooperate; (ii) the devising of ways and means of overcoming his particular prosthetic problem. Standardization was unrealistic, and the amputee required the knowledge, skill and judgement of a team. The least requirement comprised the medical officer, the prosthetic engineer, therapists, artisans and the amputee himself. Individual approach to each amputee was essential. Each member of the team must make his individual contribution to the particular prosthesis. Australia had been lacking in any organized effort to improve techniques, ethics and in particular, the standards of prosthesis, and the need for team-work was not sufficiently realized. A scattered population and a scarcity of limb-making facilities added to the local problem. In 1945 the Repatriation Commission had established a research section under a prosthetic engineer to assist the surgeons and artisans. In 1956 the Commission requested that departmental medical officers concentrate on improved cooperation with the artisan. By studying the principles of limb-fitting, the medical officer became aware of the artisan's problems and was able to assist the prescribing surgeon and the artisan. By further study of the mechanical requirements and by close cooperation with the therapist, a true team approach was made to the problem of amputee rehabilitation.

Dr. Klein went on to say that a prosthesis should be simple, and should function as nearly as possible like the part it replaced. It should fit and be comfortable. Furthermore, it should be light, strong, durable, economical and cosmetically acceptable. With artificial arms, the main requirements were the ability to grasp, to lift, and to place the working prosthesis in any of the positions required for everyday activities. Weight-bearing was not a problem, and fitting was usually done with a plaster cast. Plastic resins reinforced with fibre glass were the

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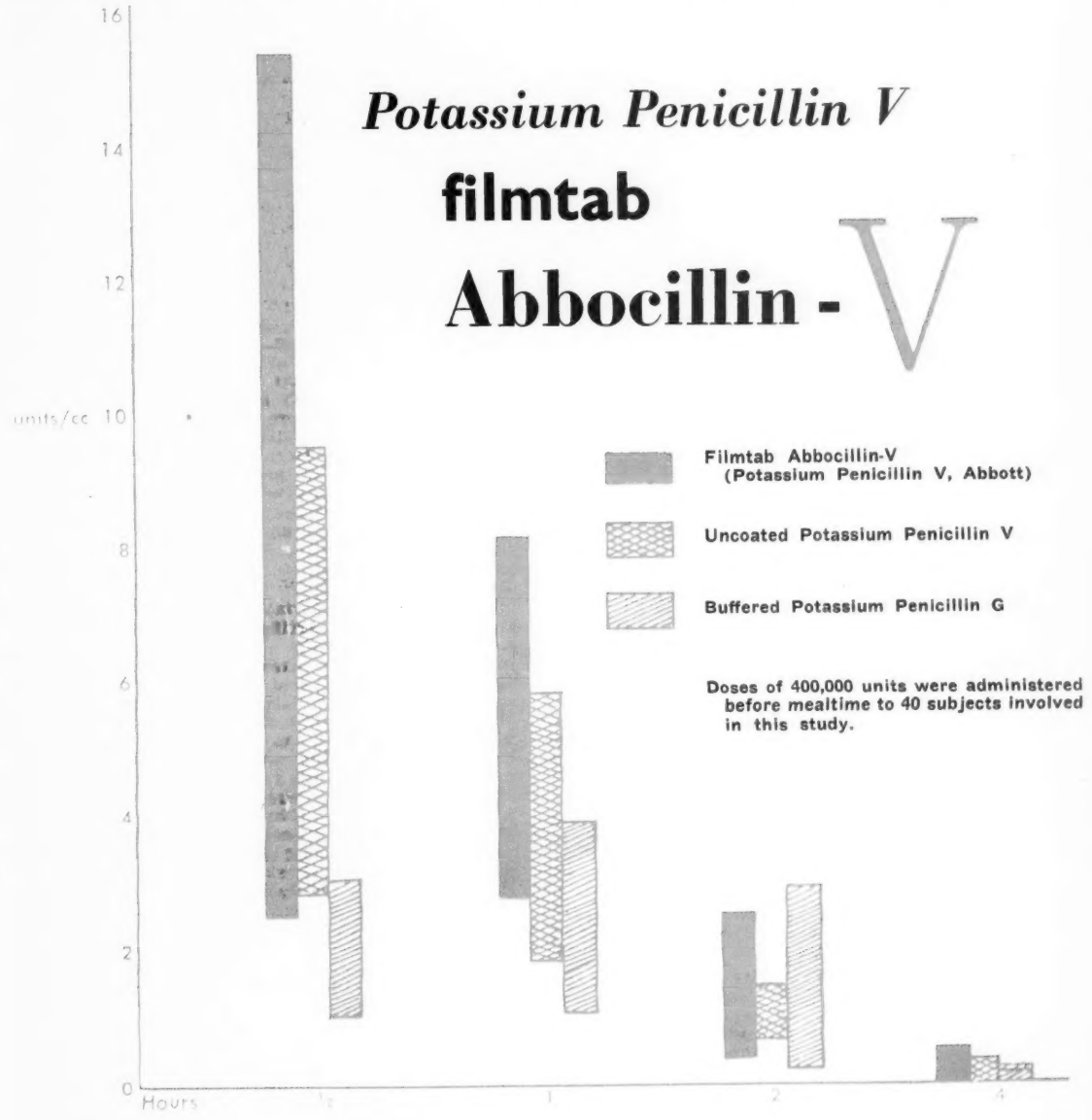

The chart represents a comparison of the blood levels of FILMTAB ABBOCILLIN-V (Potassium Penicillin V, Abbott) with uncoated potassium penicillin V, and with buffered potassium penicillin G. Bar heights show ranges, while crossbars show medians. Note the high ranges and averages of FILMTAB ABBOCILLIN-V at half-hour, and at one hour.

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most suitable substances for manufacture of the upper extremity prosthesis by moulding to the male cast. Motivation might be by harness or by cineplasty. Cineplasty had the great advantage that the terminal device could be worked in any position. Biceps and pectoral cineplasty had proved most satisfactory over the last 10 years. The hook was the most useful terminal device, particularly the "lyre"-shaped Sierra hook. The voluntary closing hook, which was closed by muscle force, was physiologically desirable. With cineplasty the pressure of the tunnel pin on the remaining end organs in the muscle gave the patient a proprioceptive sense in his hook. Voluntary opening hooks which were opened by muscle force and closed by a spring, had one slight advantage, in that the mechanism was simple. Voluntary closing mechanical hands with a "chuck" grip between the thumb and first two fingers were most acceptable cosmetically, especially when covered with the life-like plastic glove, but their utility was limited. Wrist-flexion units, elbows easily actuated to flex, extend and lock in any position, external elbow hinges with the same actions and step-up units to increase flexion or rotation were all necessary to produce satisfactory prosthesis for individual amputees. With modern units, patients with all types of stumps and even disarticulations could be given useful prostheses.

Dr. Klein then discussed lower extremity prostheses, which he said were a different problem. A brief description of the requirements of above-knee fitting would show that that was so. The requirements were the same whether the prosthesis was maintained by suction or by body harness. The suction socket was rarely contraindicated. Arterial disease was not a contraindication. In the preceding eight months 95·5% of the above-knee buckets produced at the Repatriation Artificial Limb Factory, Victoria, had been suction sockets. Apart from the obvious measurements, such as length and circumference of the stump, it was most necessary to record the distance from the ischial tuberosity to the adductor tendons. An estimation of the amputee's general musculature and coordination was required in deciding the type of knee joint. Those knee joints were broadly designated according to their actions as "constant friction", "variable friction", "friction lock" and "polycentric". Different amputees would require different actions and/or combinations. It was thought that a well-designed "variable friction" knee might satisfy the needs of most amputees. The planning of the bucket might be approached by one of two methods. On the one hand, a plaster cast was made, but as it did not satisfy the anatomical and biomechanical requirements, considerable skill was necessary in altering the cast. That was the common method in Germany. On the other hand, the American practice of using a quadrilateral template to designate the inlet, as advocated by the University of California, Berkeley, had much to recommend it. The bucket was then carved slightly undersized, and by removal of excess wood was carefully fitted to the individual stump.

Dr. Klein went on to say that in the above-knee amputee the main weight-bearing area was the region of the ischial tuberosity. That was kept back onto the posterior brim of the bucket by having the antero-posterior diameter in the medial part of the bucket half an inch shorter than the distance from the adductor tendons to the ischial tuberosity, and the anterior wall two or three inches higher than the posterior brim. Ideally, the ramus of the ischium should fall inside the medial wall. Pressure of the ischial ramus on the medial brim was extremely painful. Efforts to overcome that by cutting down the wall allowed the development of a fibrous roll, which in turn developed inclusion cysts from chafing. The posterior brim should be parallel to the floor on weight-bearing. As the amputee was essentially supported by his ischial tuberosity, and as his effective body weight was directed down through the mid-vertebral line, the ischial tuberosity area on the posterior brim of the bucket acted as a fulcrum to a lever arm represented by the pelvis. The counterweight (to the body weight) was supplied by the abductors. As muscles functioned most efficiently at normal rest length, in order to get the most force from the abductors to counteract body weight, it was necessary to adduct the stump so that the angle between the pelvis and the femur was as nearly as possible the same as that in the normal limb. Adduction also allowed the adductors to relax. In practice, that was achieved by making the medial wall of the bucket vertical and sloping the outer wall in adduction. Because the amputee had unlimited flexion but had lost most of his extensors, some flexion of the bucket was necessary. As the ischial tuberosity was the weight-bearing line, and since a gait with minimal distance between the heels was the least energy-consuming and the most cosmetically acceptable, then the vertical line down from the point of contact of the ischium with the bucket to the floor was the average position for the foot. After individual fitting to the stump, the bucket was secured onto the so-called "skeleton leg" for a trial walk. The bucket was placed on that appliance with the medial wall vertical and the foot directly under (or medial to or just lateral to, depending on femur length) the point of contact of the ischial tuberosity. As the patient walked, minor adjustments could be made to height, planes of joints, valgus, varus, toe in, toe out, etc., until the amputee was walking to the satisfaction of the therapist. The entire set-up was then transferred to a jig, and after setting, the skeleton leg was removed and the limb was built to the bucket in the jig, it being thus assured that the alignment was the same as that arrived at during the trial walk. As considerable manipulation was required to construct a limb in that jig, wood was the medium of choice for building a well-aligned prosthesis because of the ease of cutting and glueing.

In conclusion, Dr. Klein suggested that it was the duty of all concerned with amputees to be in a position to prescribe the prosthetic requirements for the individual amputee. He said he was convinced that that could be achieved only with the help of the prosthetic engineer, the therapists, the artisans and the amputee himself.

M. NAOMI WING (New South Wales), in opening the discussion, said that she proposed to take the subject a step further, rather than to reiterate the points brought out by the speakers. As Director of the Rehabilitation Centre at Royal South Sydney Hospital, Sydney, she saw many amputees. The experience gained in that centre in the last year in the retraining of 32 amputees (eight upper limb, 24 lower limb in various situations) had taught them a great deal about the obstacles to the art in the State of New South Wales. She knew that they also existed in the other States. Their first patient was a seriously maladjusted young man with a high above-knee amputation. The solution of his problems, psychological and physical, had led them down many paths, and she proposed to discuss their own difficulties and how they had tried to overcome them—never forgetting the patient's own doctor and his difficulties with no team to assist him. Dr. Wing said that those problems could be considered as (i) social problems, (ii) medical and psychological problems, (iii) surgical problems, (iv) conditioning of stumps and limb fitting, (v) the limitations of competitive limb firms.

Discussing first the social problems, Dr. Wing said that they should have been completely dealt with before any surgery was undertaken. In Australia they had not been taught to take a careful social history before making a surgical decision, and so it was seldom done. Experience overseas had proved the worth of that measure, which should be part of every routine history-taking; as far as amputees were concerned, it was imperative. The patient's occupation and work habits, hobbies and home and financial situation all played a vital part in his acceptance or otherwise of his disability. There should be a ready means of obtaining those details briefly before his operation was performed, and many of the worrying psychological problems which they had encountered would not occur.

Referring to the medical and psychological problems, Dr. Wing said that the patient's medical history prior to his accident was important, especially if he was a diabetic or had any other disabling disease. If he had a pre-existing psychiatric state, it made his retraining still more difficult; a psychiatric assessment was very helpful

in that regard. The patient's post-operative nutrition was often overlooked; hospital food was often plentiful but uninteresting, and although it was presented to him, he did not eat it and became deficient in protein. They had been specially impressed by that in patients who had been referred to them from a hospital with a purely vegetarian diet. One hesitated to make any complaint to hospital staff at the present time, but that was really important in promoting healing. The amputation was the patient's anatomical lesion, but his general well-being should not be lost sight of while that was being cared for. Discussing the surgical problems, Dr. Wing said that the experience of two wars had given them a wealth of valuable information if they would profit by it. With civilians, in amputation under antibiotic cover with modern anæsthesia, a competent surgeon should be able to determine the ideal site of amputation, and aim at achieving his goal in one operation. The pain and suffering of reamputation caused severe psychological trauma and lost the patient's confidence. An "ideal" stump was one in which good circulation was maintained; it could generally be relied upon to last the patient's lifetime, and its nature in no way restricted the choice of limb and those useful mechanical features which benefited the individual. The ideal length of stumps in the lower limb had been found to be: (i) Above knee: a stump measuring 10 inches to 12 inches from the tip of the great trochanter for patients of average height, with a scar transverse and posterior—a long anterior flap. (ii) Below knee: a stump five inches from the inner edge of the tibial plateau with a scar terminal and transverse. In the upper limb ideal stumps were: (i) Arm: a stump measuring eight inches from the tip of the acromion process and having a terminal transverse scar. (ii) Forearm: a stump measuring seven inches from the tip of the olecranon process with a terminal transverse scar. Modern prostheses were designed for those sites, and special problems necessitated a great deal of expense and special construction which could be avoided by a thoughtful approach in the initial stages. The surgeon should superintend the early post-operative care and prophylactic measures to prevent contraction and loss of movement in adjacent joints. He should avail himself of the services of a physiotherapist if possible, to teach the nursing staff stump bandaging and the early exercises which were the beginning of the patient's rehabilitation. The prohibition of supporting pillows under the joints prevented many of the complications of flexion deformities. The psychological trauma inflicted by an amputation was great, and the surgeon should reassure his patient from the outset and see that that atmosphere was also maintained by the nursing and ancillary staff. The patient should be given occupation for his mind and hands, and encouraged to confide in the almoner, who would attend to his domestic and financial worries. His uninjured structures should be kept fit by a programme of exercises—a busy patient had no time to brood and worry about his future. If those procedures had been carefully attended to in his convalescence he should be fit for limb fitting in six to eight weeks instead of six to eight months, as was found when those principles had been neglected.

Turning to the conditioning of the stump and limb fitting, Dr. Wing said that she had had the good fortune to visit with Dr. Leon Gillis at St. Mary's Hospital, Roehampton, the limb-fitting centre, and also to see the factories of Hangers and Steepers, who had shown her many patients successfully fitted with satisfactorily functioning prostheses. That procedure had also been repeated at Captain Cantly's famous centre in California, and at many other centres in U.S.A., as well as at the Orthopædic Hospital at Frankfurt, where the 97th American General Hospital with over 200 orthopædic beds was situated. She had also visited the Orthopædic Hospital at Heidelberg where Dr. Lindeman and Dr. Marquand designed the pneumatic limb, and she had been able to observe in Harberman's limb factory in Frankfurt. With all those experiences she realized the extreme disadvantages under which they worked in Australia; but she had also become acquainted with the modern approach and the excellence of their end results. The Ministry of Health in Great Britain had really expanded that branch of their work much more satisfactorily than other spheres of the National Health Service, and she highly commended to those present their book "Artificial Limbs in the Rehabilitation of the Disabled", by R. Langdale Kelham, Chief of Limb Fitting Services, Great Britain. One saw the results of a great deal of careful scientific research designed to produce better and lighter materials for sockets, containers, knee locks, ankle joints and feet, all with improved results. The aim of that work was to produce a balanced limb with good alignment, and each of the features designed was meant for that particular limb. Unfortunately in N.S.W. they found arrogant technicians with poor basic training, who took bits and pieces from different types of limbs, assembled them together and called them by a name purporting to be one of the recognized overseas types. Such technicians would not avail themselves of modern advances. The responsibility of ordering a prosthesis was an important one and should not be lightly discharged. It seemed to have become the habit in N.S.W. for many surgeons to refrain from any conditioning of the limb and to send the patient to the limb-maker with little knowledge of his capabilities in relation to that particular patient, simply telling him to make a limb. In other parts of the world that would not be tolerated—in fact, it would be regarded as negligence. The thigh stump was not considered ready for fitting with any form of prosthesis, including a pylon, until (i) the scar was firmly healed and consolidated, (ii) the terminal œdema had wholly or nearly resolved, (iii) the several nerves had lost their sensitivity, permitting handling of the stump, exclusive of psychological factors. The stump should be sound from a circulatory point of view, and should also possess adequate musculature for control of the prosthesis. That state could best be achieved by careful reconditioning, if possible by a team which had also attended to the patient's general physical and psychological state. When the limb was ordered, the prescription should contain details of the patient's age, sex, build, physical and mental condition, occupation and hobbies, geographical situation and proximity to a limb centre for adjustments. In the upper limb the main functions which they were trying to replace were (i) the ability to grip and carry objects, (ii) the ability to hold down or steady objects. "Cineplasty" was not universally accepted. Such prostheses should be simple, light and strong, and should fulfil the functional requirements of the patient. In the lower limb, stability and good alignment for ambulation were the chief requirements with the lightest material available. Skilled overseas rehabilitation staff could teach them a great deal; they could supervise and teach stump-conditioning, resistance exercises and gait-training; they could supervise limb-fitting and adjustments until 100% function was obtained. While that was proceeding, the patient was having a full programme of work in all media to condition him to an eight-hour work tolerance by the time his limb was satisfactory. He was not fit to return to work until (i) he had an eight-hour work tolerance five days a week, (ii) he could transport himself to and from work, (iii) he had a settled place of abode and was capable of all his own acts of daily living. No one doctor was capable of all that training; but to be 100% efficient it must be done, hence the necessity for the team approach.

The group therapy in the centre was invaluable. The patient saw others with similar disabilities who had progressed a stage further than himself and were being discharged, and thus realized the possibilities and gained confidence. Rehabilitation experts depended on the surgeon for good surgery; he must depend on them for good rehabilitation. The problem was too great for a busy surgeon to supervise all the small details that led to a successful conclusion.

Dr. Wing finally said that competitive limb-fitters were not benevolent institutions, and their profit must be made at the expense of the disabled. Her experience had proved that each firm had its special capabilities, but no one of them had universal qualities. That applied very forcibly in the fitting of upper limbs, which was a highly specialized technique. The approach was: "You pay for the limb on delivery and we make the adjustments after-

wards." That was not good enough—there were many adjustments necessary, and payment should depend on satisfactory function after several weeks in the rehabilitation centre. No patient should be discharged from a rehabilitation centre with an upper extremity prosthesis without being able to perform all his acts of daily living efficiently as well as handling his tools of trade. With a lower limb prosthesis he should be able to discard his crutches, and should have acquired a satisfactory gait, be able to walk up and down steps and gutters, get safely in and out of public transport, and be able to drive a motor car if he wished. There should be no pressure from the limb anywhere, and he should be well acquainted with the care of his stump and stump socks. The latter should be provided by the limb firm concerned. The limb-maker should be honest enough to admit his limitations; it was certainly essential for the patient and in the end better for his business. Dr. Wing said that it was her sincere hope that the facilities of the Commonwealth Repatriation Limb Service could be satisfactorily expanded to provide an adequate service at reasonable prices. From all that had been said, those present would realize that the fitting of limbs was a highly skilled technical procedure, requiring a competent surgeon who would cooperate with the rest of a skilled team for the good of the most important person in that team—the patient.

GEORGE BURNISTON (Victoria) said that he agreed with the speakers that it was a pity the session had not been combined with a meeting of the Section of Orthopædics, for frequently the efficiency and quality of amputation surgery ultimately determined the usefulness or otherwise of a prosthesis. With regard to the "sites of election" for amputation, he had noted, during a visit in 1957 to the limb-fitting centre at Roehampton in London, that emphasis was still placed on the "ideal site of election" for amputation, although Dr. Ritchie and others at Roehampton had modified the views they previously held on that matter. For example, whereas ten years earlier they had regarded Syme's amputation of the lower limb with disfavour, they now regarded that as a suitable amputation in certain cases, particularly for young persons, allowing the fitting of a satisfactory prosthesis. They were also less fixed in their views regarding "sites of election" in the upper extremity, and tended to favour as long a stump (both above and below elbow) as possible. Even so, on that same occasion he had noted how American authorities still regarded the British as being too conservative in their views on "sites of election". Dr. Burniston thought, however, that generally surgeons should give more consideration to the question of producing a good stump for the limb-fitting surgeon or the limb-fitter. His own experience in that matter in the Commonwealth Rehabilitation Service, to which amputees were referred from many sources in the community, indicated the need for some uniformity of approach in techniques of amputation. He also agreed with the speakers' remarks regarding the importance of proper physical preparation of the stump prior to the fitting of a prosthesis, and of preparing the patient psychologically, not only prior to amputation, but also during the whole period of rehabilitation. At Commonwealth rehabilitation centres, a physical programme involving exercises to strengthen the stump and measures to prevent or correct contractures had long been in use. Also after the prosthesis was fitted, reeducation was carefully supervised. Every aspect of the rehabilitation programme at the centres encouraged the amputee to the view that, with proper guidance and by proper efforts on his part, he should become a very able fellow. On the question of the use of pylons, Dr. Burniston said that he had noted, during his visit to Roehampton, that great use was made of pylons, especially for the older patients; in fact, he was interested to observe that 80% of amputees at the limb-fitting centre at Roehampton were on that occasion over the age of 50 years. In fact, there were one or two who were approaching 90 years of age. For those patients, the use of pylons seemed to be of particular value. The great majority of that group had suffered amputation as a result of degenerative vascular disease affecting the extremities. Not only was it necessary to assess their ability ultimately to wear a prosthesis, but also pylons enabled the limb-fitting surgeon to decide whether the fitting of a proper prosthesis would or would not be worth while, especially in relation to the aged amputee's determination to get around again. In the Commonwealth Rehabilitation Service, it had been found that pylons were of particular value for the amputees in the average age group the Service handled—round about 30 years of age. They not only helped to condition the stump, but also enabled some of those amputees to return to work when there were inordinate delays in the making and fitting of the full prosthesis. In certain States that question of delay was a real problem.

Dr. Burniston said that he was very interested in the present policy of the Repatriation Department to employ full-time limb-fitting surgeons at their factories; and if the enthusiasm and knowledge which Dr. Klein demonstrated were typical of the medical men appointed throughout the Repatriation Department for that purpose, it augured well for the type of service the Repatriation artificial limb factories would offer servicemen and ex-servicemen. The policy of appointing those limb-fitting surgeons was, after all, consistent with established methods overseas (for example, at Roehampton) in which teamwork between the orthopædic surgeon, limb-fitting surgeon, nurse, limb-maker and therapists was especially emphasized. That had been well demonstrated at a conference on limb-fitting which he had attended at Copenhagen in July, 1957, held under the auspices of the International Society for the Welfare of Cripples. At that conference, limb-fitting surgeons, limb-makers, nurses and therapists from America, Britain and Europe met at the Orthopædic Hospital to discuss the many physical and psychological problems of the amputee including his prosthetic needs. It was apparent that in Australia they were still a long way from achieving that type of team-work service, but he hoped that the papers read at the meeting, and the discussions which followed, might help to draw attention to their urgent needs in Australia.

Dr. Klein, in reply, said that the remarks in his paper had been confined to above-knee fittings. While he agreed that there were ideal below-knee stumps, and that especially with stumps the classical amputation should be performed when possible, he still considered that age, length of stumps or arterial disease was not a contraindication to the fitting of a suction socket. In the case of upper extremity amputation, the so-called ideal stump had been decided on, partly because of prosthetic difficulties. In the two cases illustrated, disarticulation, once considered undesirable, had been of advantage to the individual amputee. The first patient, who had had bilateral wrist disarticulations, had two stumps with useful proprioceptive sense when he was not using the prosthesis. He had retained 90° of rotation, rarely seen with a classical below-elbow stump. In the second case, essentially an elbow disarticulation, the long stump had permitted stabilization of the prosthesis, while allowing a large "window" to accommodate the "Cineplasty". That would not have been possible with a classical above-elbow amputation. Because of the inability to replace any part of the hand, every effort should be made to save every portion. In general, he considered that as much of an upper extremity as possible should be saved.

Dr. Klein then said that he did not consider that mass production of prostheses to suit classical stumps was desirable, or even possible, as all prostheses made at the Repatriation Artificial Limb Factory, Victoria, were custom-made to the individual. Dr. Canty himself had stated that standardization in prosthesis was unrealistic, and Dr. Klein believed he had also advocated retaining as much upper extremity stump as possible, because of the greater proprioceptive sense. With regard to pylons, Dr. Klein said that in his opinion they should be avoided, unless there was no possibility of the amputee's wearing an articulated limb. If the surgeon could not be persuaded to complete his undertaking by adequate bandaging and prevention of deformities, it would be advisable to spend a month with careful bandaging and exercises, rather than fit a pylon. The bandaging and exercises were easily

taught to the average amputee. He considered that the pylon had four great disadvantages: (i) the plug fit caused rolls to develop, which made the fitting of the permanent prosthesis extremely difficult; (ii) the apparent reduction of flexion was due to the development of lordosis; (iii) in attempting to bring the pylon through, the amputee must abduct the limb, and abduction was one of the deformities they were attempting to overcome; (iv) bad gait resulted, which caused delay in the amputee's obtaining the least energy-consuming and most cosmetically desirable gait, at which they aimed. Dr. Klein finally said that he had mentioned in his paper that the U.S.A. and particularly Australia, had serious problems owing to the scattered populations. He still considered that the suction socket was to date the ideal above-knee prosthesis, and that they must aim at overcoming that problem by better facilities, rather than fit the amputee with outmoded prostheses.

Section of Surgery.

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Hypertrophic Pyloric Stenosis of Infancy.

J. STEIGRAD (New South Wales) took as the subject of his presidential address "Hypertrophic Pyloric Stenosis of Infancy". He said that the exact ætiology of the condition was unknown. There was probably an imbalance in the neuro-muscular mechanism, with consequent work hypertrophy of the circular muscle of the pylorus. In his series of 500 patients the ratio of boys to girls approximated 5:1. The incidence of first-born infants in the series was 41%; that did not appear to be a significant predominance. In 40 instances there was a history of infantile pyloric stenosis in a sibling, father, mother or close relative. Vomiting was the important symptom, and the vomitus did not contain bile. The palpation of a pyloric tumour was the most important single physical sign, and X-ray studies could be of the utmost value in the case in which the diagnosis was difficult on clinical grounds alone. The Ramstedt operation produced a cure in nearly 99% of cases, and was attended by a low mortality rate (0·8% in the series under discussion). Dr. Steigrad said that it appeared that all infants diagnosed as suffering from hypertrophic pyloric stenosis should be given the benefit of operative cure.

N. MYERS (Victoria) said that in late cases a bleeding tendency was present and that that might be related to vitamin *K* deficiency. He pointed out that patients seeking private attention were more likely to be still breast-fed. Hospital patients had usually had a series of feeding changes before their admission to hospital. Discussing diagnosis, he said that the most important differential diagnosis was that of hiatus hernia. In that condition vomiting almost invariably commenced in the first week of life. The two conditions might coexist. At the Hospital for Sick Children, Great Ormond Street, London, 137 cases of hiatus hernia had been met with in a ten-year period. Of those, ten had been diagnosed as pyloric stenosis, but at operation in only half of them was a tumour found.

DOUGLAS COHEN (N.S.W.) supported Dr. Steigrad's contention that surgery should be advised in all cases. Commenting on the association with œsophageal hiatus hernia, he said that although that condition might be misdiagnosed as pyloric stenosis, the two conditions not infrequently coexisted. Peristaltic waves might be seen in that condition in the absence of pyloric stenosis, so that a tumour should always be carefully sought and could usually be found if sufficient time and care were taken by an experienced examiner. Dr. Cohen pointed out that, although pyloric stenosis was usually found between the second and twelfth weeks of life, the onset might occasionally be earlier or later. On the question of the incision to be used at operation, he supported Dr. Murray Clarke's recommendation for a transverse incision. He said that, although it took a little longer to make, it was completely backed by the liver, which actually had to be rotated upwards in order to deliver the pylorus. It was easy to close, non-absorbable sutures always being used, and the cosmetic result was superior to that with the vertical incision.

Radical Neck Dissection.

M. EWING (Victoria) read a paper entitled "Radical Neck Dissection". He said that although radiotherapy was usually preferred in the treatment of a mouth cancer at its primary site, surgery was the method of choice in the control of its extension to the cervical lymph nodes. There were distinct disadvantages in that division of the responsibility for treatment. Although the presence of enlarged nodes in the neck was the main indication for a block dissection, consideration was also given to the likelihood of cure of the primary lesion, to its site and its histology, to the patient's age and general condition, and to the condition of the metastases themselves. Professor Ewing said that a strong argument could be made for the removal of the neck nodes before they were enlarged, but most surgeons followed an expectant policy and removed them only when they first became palpable. Such a policy implied, for its success, a 100% follow-up. The block dissection was usually performed about a month after completion of the irradiation. The operation was designed to remove all the lymph tissue in the neck on one side, from the jaw to the clavicle and from the mid-line to the trapezius. It involved sacrifice of the jugular vein and its tributaries, of the accessory nerve, of the entire submandibular gland and of a part of the parotid. The post-operative disability was not considerable. The operation could be carried out on both sides at once, but it was preferable to perform it in two stages, separated by at least three weeks. The internal jugular vein could be sacrificed on both sides. Increasing interest was being taken in the possibility of resecting the primary growth in continuity with the block dissection of the neck. That technique was applicable, not only to the treatment of a cancer of the mouth, but equally to a tumour of the larynx, thyroid or parotid.

EDWARD WILSON (N.S.W.) said that Professor Ewing and several speakers in the discussion had referred to the policy of "wait and see" in the treatment of carcinoma of the lip and mouth when there was no evidence of metastasis in the cervical lymph glands. Only when such evidence was found was a radical neck dissection usually advised. In those cases such management offered a fair

chance of success, but in cases of malignant melanoma it had very little to offer. In Dr. Wilson's experience the chance of curing a malignant melanoma was practically nil once the regional glands showed evidence of involvement. Instead of a "wait and see" policy in cases of malignant melanoma, he felt certain that the regional lymph glands should be removed soon after the diagnosis of malignant melanoma was made. He had had a few such cases in which the lymph glands had been found to contain only microscopic metastases, and in which the patient had shown no sign of any metastasis since then. The natural history of malignant melanoma was so irregular that it would be many years before it would be possible to be sure that the treatment had saved those patients. However, in the meantime, he would like to hear Professor Ewing's comments on the place of radical neck dissection in the management of cases of malignant melanoma.

K. S. JONES (N.S.W.) asked what action Professor Ewing would advise when he had a patient who had a single enlarged gland proved by excision biopsy to be malignant and full investigation had failed to reveal the primary source in the oro-naso-pharynx.

Professor Ewing, in reply, said that he would carry out radical neck dissection on the affected side with radiotherapy to the primary lesion when it had been revealed ultimately by repeated internal examinations of the suspected sites.

Dr. Jones then asked another question. He said that Professor Ewing had spoken of a system of follow-up which consisted of short intervals at first and then examination at longer intervals. He said that it was probably presumptuous of him to question that, but surely it was a statement that was handed down from book to book and from professor to professor and that needed closer inspection. On the known life history of those malignant conditions, would it not be more logical to examine the patient after the longer intervals at first and shorter intervals as time passed, or at least at constantly regular intervals?

GRAYTON BROWN (Victoria) replied to Professor Ewing on the question of whether a better cosmetic scar could be produced than the double "Y" incision advocated by Professor Ewing. He said that the vertical limb of the scar did produce a raised ridge in most people. That might be avoided by using several transverse incisions, but the resulting dissection was not satisfactory owing to poor exposure. After discussion of the problem with Dr. B. K. Rank on several occasions they had agreed that in a malignant condition such as that under discussion, attempts to produce a more attractive scar at the expense of thorough dissection was not advisable. So far as carcinoma of the tongue was concerned, Dr. Grayton Brown differed from Professor Ewing in advising a block dissection in all cases, because the natural history of the disease was very different from epithelioma of the lip, almost all patients with the disease developing metastases in the cervical lymph glands before death.

Professor Ewing, in reply, said that recurrence in the neck following gland radical dissection was generally due to "spillage" of the malignant cells at the time of operation, and made its appearance early. Should it not appear early, it was unlikely to occur, and the patient did not need to come for follow-up examinations so frequently. Professor Ewing pointed out that he was speaking of oro-pharyngeal carcinoma, and not of carcinoma of the lip, in which radical gland dissection might be followed by late local recurrence.

Bleeding from the Upper Part of the Alimentary Tract.

GRAYTON BROWN (Victoria) read a paper entitled "Bleeding from the Upper Part of the Alimentary Tract", in which he presented a plan for the management of massive hæmorrhage by thorough medical treatment and for the careful selection of patients who required surgical treatment. Dr. Grayton Brown said that the cause and site of the bleeding should be diagnosed as soon as possible. Gastroscopic examination and X-ray examination with a barium meal might be helpful, but there would always be a considerable group in which the diagnosis was uncertain. In that group acute ulceration should be suspected. Selection of patients for surgical treatment depended on frequent consultation and mutual confidence between physicians and surgeons with special experience in gastro-intestinal diseases. Dr. Grayton Brown presented a review of 100 consecutive cases, from one unit, of massive hæmorrhage from the upper part of the alimentary tract. Twenty-four patients were selected for surgical treatment. Two deaths followed surgical treatment, and one patient died who had been subjected to medical treatment only. Dr. Grayton Brown stressed the fact that the complete omission of surgery might cause unnecessary loss of life. He said that at operation a meticulous search should be made for the site of the bleeding; it was often necessary to open the duodenum and then the stomach. The problem of persistent acute hæmorrhage from œsophageal varices remained unsolved, and caused grave concern to both physicians and surgeons.

ANTHONY KELLY (Victoria), in opening the discussion, asked Dr. Grayton Brown what proportion of the 22% of patients in whom the cause of the bleeding was undiscovered had been submitted to operation. Dr. Kelly said that in all cases in which operation was performed while the bleeding was still in progress one should endeavour to ascertain the exact cause and site of the bleeding in order to lessen the number of undiscovered cases and to be quite sure that the hæmorrhage was in fact controlled. Dr. Kelly then outlined his plan of attack in operating in such cases. He said that if the hæmorrhage was associated with hæmatemesis or the aspiration of blood via an indwelling gastric tube, it was assumed that the bleeding point was proximal to the duodenal papilla. In those cases the stomach and duodenum were carefully examined from without and any possible cause or site of the haemorrhage was noted. The stomach was then opened, all blood was removed, and the stomach was mopped out. By the use of suitable retractors the interior of the stomach and/or the upper part of the duodenum was inspected completely, the bleeding point found and the hæmorrhage controlled by a suture ligature. One might then decide what further procedure was necessary. It was usually a partial gastrectomy. If the hæmorrhage was associated with melæna only, and there was no aspiration of blood via an indwelling gastric tube, it was assumed that the site of the bleeding was distal to the pylorus. In those cases the duodenum was first examined carefully for the presence of a duodenal ulcer, which was the commonest finding. If no ulcer could be found, a careful examination was made of the whole of the duodenum, jejunum and ileum; and if a lesion which might be causing the bleeding was found, the bowel was opened at that site and it was decided whether that was, in fact, the site of the bleeding or not. If it was, appropriate treatment was carried out. If no site for the hæmorrhage could be found on external examination, the hepatic flexure of the colon was mobilized and the duodenum opened low in the second part. The interior of the whole of the duodenum was carefully inspected, particular care being taken in the search for an ulcer in the distal part of the organ. If the site of the hæmorrhage was still undiscovered, it probably would remain so. Dr. Kelly stressed the importance of definitely locating the bleeding point in all cases in which one operated while the bleeding was still in progress, so that after operation one could be quite sure that what one was attempting to do had, in fact, been satisfactorily accomplished.

The Surgery of Veins.

JOHN LOEWENTHAL (New South Wales) read a paper entitled "The Surgery of Veins". He said that although venous lesions were commoner than arterial lesions, they were a source of great social and economic loss. A venous thrombosis caused serious effects beyond simple obstruction to outflow. Actual gangrene could occur from purely venous obstruction, and the mechanism producing that extreme effect probably existed to a lesser degree in all cases. The immediate local result of an intravenous clot

was slowing of the rate of flow, increased thromboplastin and "sludged" blood. Mass clotting might ensue, or resolution could occur. Heparin, the physiological anticoagulant, opposed that process at all points; it should be given intravenously until all local tenderness had subsided —for as long as two or three weeks. It could be used as a therapeutic test for post-operative pulmonary infarction. The venous valve was destroyed by thrombosis, and its fate was probably the source of subsequent symptoms. Professor Loewenthal outlined the principles of management of the post-thrombotic state. He said that the post-thrombotic syndrome in the lower limbs—pain, swelling, ulceration and eczema—varied greatly in degree according to circumstances. The first principle to be observed was that the acute phase was treated fully and energetically. The second principle was that "compensatory" varices secondary to a deep vein thrombosis rarely occurred. If the varices filled from above, they could be safely ligated. The third principle was that post-thrombotic pain was sometimes found accompanied by only slight swelling, and could usually be relieved by sympathetic release. The fourth principle was that the chronically swollen limb had to be treated with patience and persistence; every effort should be made to keep the swelling controlled. The fifth principle was that once a lower limb had suffered a deep vein thrombosis, it was always susceptible to ulceration of a peculiarly painful and intractable type. Therefore, the slightest break in the continuity of the skin, especially in the distal half of the leg, should be treated seriously, the treatment including, if necessary, a period of bed rest. Once ulceration had become established, a vast literature bore eloquent evidence, not of the difficulty of causing the ulcer to heal, but of that encountered in keeping it healed.

MUNRO S. ALEXANDER (N.S.W.) said that in the acute thrombotic phase, while the eight-hourly intravenous use of heparin was undoubtedly desirable, necessity sometimes permitted only an initial intravenous injection, and in domiciliary practice intramuscular injection of heparin retard had been used successfully without too many untoward side effects. Professor Loewenthal had rightly stressed that 10,000 units of heparin given intravenously eight-hourly could be used safely without laboratory control, and in domiciliary and country practice it was good to know from an authority like Professor Loewenthal that that was so. Dr. Alexander asked Professor Loewenthal if he could tell him what he did when a vein broke in the course of stripping veins, and what was his technique for applying pressure over the veins being stripped. He also asked what Professor Loewenthal did about the chronic leg ulcer with no previous history of deep venous thrombosis and no clinical varicose veins. The case was recalled of a patient with a long-standing unhealed ulcer who had to go to bed when she had a stroke and the ulcer soon healed.

Professor Loewenthal, in reply, said that he did not like intramuscular or subcutaneous administration of heparin, and for domiciliary or out-patient use even one intravenous injection of heparin each day had a clinical effect which in his opinion was greater than that which was indicated by blood heparin estimations. He felt that in domiciliary practice two intravenous injections per day might often be possible. He said that the Gypsy Rose Lee of surgery was the vein stripper. Historically it had come three times and gone out twice. It had a bad history, and he was not wedded to it at all. He was sure that the patient who had had a stroke had had a hypertensive ulcer, and his time did not permit further discussion of it.

Management of Congenital Abnormalities.

B. K. RANK (Victoria) presented a clinical demonstration of the management of congenital abnormalities.

Hydronephrosis.

JAMES PETERS (Victoria) read a paper entitled "Hydronephrosis". He said that it was primarily a curable disease, because it was secondary to obstruction. Adequate removal of the obstruction would allow a recovery of the kidney and preserve renal function. Urine formation depended on glomerular filtration, tubular secretion and muscular conduction. The physio-pathology of obstruction had as its background pyelovenous back flow, tubular back flow and interstitial and lymphatic back flow. The result of imbalance was hydronephrosis in three stages: (i) traumatic, with vascular engorgement, hæmorrhage and stasis; (ii) hypertrophy of conducting structures, pelvis and ureter; (iii) dilatation and parenchymatous degeneration, leading finally to atony and fibrosis and complete loss of renal function as vascular derangement and decrease of blood supply led finally to failure. Those factors varied whether the obstruction was partial or complete.

The other kidney was, of course, of paramount importance. Compensatory hypertrophy occurred whether the obstruction was partial or complete. Renal counterbalance showed that the weaker kidney could not compete with the stronger one. More work given to the stronger one allowed compensatory hypertrophy, and deprived the weaker one of the stimuli necessary to tubular hypertrophy. Thus, clinically, it might be difficult for surgery to repair a damaged kidney after relief of obstruction, if that counterbalance had proceeded too long; but it had to be remembered that repair was effected quickly in the young, and operative relief given quickly avoided renal counterbalance.

Dr. Peters then discussed the causes of obstruction at the pelvi-ureteric junction and went on to describe the investigation of hydronephrosis with special reference to cine-pyelography. He illustrated his remarks by showing a cinematographic film. He said that cine-pyelography was the method of obtaining a moving picture of the pyelogram. That was done at a speed of 16 frames a second, and gave a complete record of pelvic, calyceal and ureteric movement, instead of the usual routine 5, 10, 15 minute films of a pyelogram. The advantages were illustrated by the film shown.

Dr. Peters went on to discuss treatment. He said, first, that the condition was one of obstruction, and necessitated surgical treatment as soon as the diagnosis was made. If the renal function was such that repair would not be possible, owing to the presence of a compensated healthy kidney on the opposite side, then nephrectomy was indicated. Secondly, if the condition was bilateral, the greater opportunity of repair was in the healthier kidney; but improvement of that kidney would further decrease the possibility of success in the weaker one because of the absence of counterbalance stimuli, so the weaker one was operated on first. The surgical field should be sterile. By that he meant that the sepsis of the kidney itself should be treated adequately before operation. The operation should relieve the obstruction with the least damage of blood supply to the tissues; it should ensure an adequate and dependent pelvi-ureteric junction, and minimize the possibility of recurrent stricture. Finally, the post-operative management should be meticulous with absolutely aseptic technique of irrigation and dressing, and careful attention to urinary infection if necessary, in the months following the operation.

Dr. Peters finally discussed the technique of Scardini-Culp pyeloplasty, as adapted by himself, and illustrated his remarks by showing a moving picture in colour. He said that the Scardini-Culp procedure was a more stable form of anastomosis, which allowed a flap of pelvis to be turned down to the ureter; that had the advantage of making the opening dependent and the possibility of scarring less. The incision commenced in the ureter, passed through the stricture, and then to an equal distance along the pelvis, from where it commenced in the ureter up to the pelvi-ureteric junction, and was then taken down to the most dependent portion of the sagging pelvis. That allowed the flap to drop down. The anastomosis was made first posteriorly to join the flap to the ureter, and then a nephrostomy was established and a splint tube was placed in position. Finally, the resultant wide gap was closed with suturing to plicate and join over the pelvis itself. In that way, there was no division of tissue;

there was a continuity of blood supply to the ureter itself; and as a result the pelvi-ureteric junction was widened to the extent of half the width of the flap. Should the stricture be long, the resultant flap would not be of sufficient length to be joined in its entirety. That would allow a certain portion of the ureter to remain open. If the areolar tissue was simply joined above it and the splint left in position, the new ureter would form; that would allow for any stricture, however long it might be. Dr. Peters finally presented the results in 30 cases of pyeloplasty; one patient required nephrectomy later. The series extended over an age group from 11 to 54 years. In all cases there was an improvement in function, and the anatomical improvement varied. That variation appeared to be related to the extent of muscular conduction failure.

T. GIBLIN (Tasmania), in opening the discussion, asked a question with regard to the re-formation of stricture after intubated ureterotomy.

Dr. Peters, in reply, agreed that there was a danger present.

Complicated Anal Fistulæ.

T. E. WILSON (New South Wales) read a paper entitled "Complicated Anal Fistulæ", based on a series of 164 cases of anal fistula, both complicated and uncomplicated. He said that the majority of anal fistulæ were confined by the boundaries of the ischio-rectal fossæ, were uncomplicated and might be cured without complications. Of the complicated anal fistulæ, some were associated with malignant or other lesions, and the operation then indicated removed the fistula incidentally. For the remainder special care and attention were required; but none of those patients should lose continence because of the operation. Dr. Wilson went on to say that sometimes it was necessary to carry out the operative treatment of a complicated anal fistula in stages, and he gave examples of such cases. He said that even when a fistula passed across the ischio-rectal fossa, through the *levator ani*, across the supralevator space and into the rectum, a final result might be obtained which was acceptable to the patient. Dr. Wilson finally outlined methods of treatment giving satisfactory results.

W. WOODWARD (Tasmania) referred to post-operative and traumatic recto-urethral and recto-vesical fistulæ mentioned by Dr. Wilson, and said that the surgeon faced with one of those need not feel obliged every time to add a colostomy to the patient's abnormal orifices. He had treated three such fistulae without colostomy, and in each case healing had occurred. In the two cases of recto-urethral fistula a catheter was indwelling the urethra for ten days. In a case of recto-vesical fistula there was not only an indwelling urethral catheter but also temporary bowel sterilization and a rectal tube through the anal sphincter so as to decompress the bowel's side of the fistula. It was a larger fistula and took two months to heal, though the bowel sterilization was continued for only one week, which was the period of grossest fæcal contamination of the bladder.

Dr. Wilson, in reply, said that he agreed that not all recto-urethral fistulæ required a colostomy.

W. E. B. BOSCENCE (Tasmania) asked about the value of "Lipiodol" in the X-ray examination.

Dr. Wilson replied that it was of no value. The tract was often too small to fill.

The Indications for Surgery in Gall-Stones.

A. E. LEE (Queensland) read a paper entitled "The Indications for Surgery in Gall-stones". He said that the widespread current view that gall-stones were a potential danger to the life of their possessors, and should therefore be removed, received no support from an investigation of mortality rates in the State of Queensland. Apart from operation, deaths related to the complications of gall-stones were rare below the age of 70 years, and above that age the major cause of death was related to chronic degenerative, usually vascular, diseases, with the biliary tract disease playing a minor role. Dr. Lee showed that of the so-called dangerous complications of gall-stones, acute cholecystitis, if treated conservatively had an insignificant mortality, except in the very old. While ductal obstruction was best treated surgically, a great many common duct stones were harboured for many years without serious trouble. Surgery should therefore be regarded as a therapy for pain, rather than as a treatment of gall-stones. In skilled hands, it was relatively unimportant whether cholecystectomy was undertaken during, or apart from, an attack of acute cholecystitis. However, with the present organization of surgery, any widespread adoption of teaching that acute cholecystitis should be treated as a surgical emergency would result in a large increase in its mortality and morbidity. Dr. Lee said that in estimating the need for surgery in acute cholecystitis, age was the predominant factor, and in very old people with severe attacks drainage was wise. It seemed probable that the routine removal of gall-stones, as soon as they were recognized, would increase the mortality and morbidity of the disease, not reduce it.

F. FAY, senior (Tasmania), in opening the discussion pointed out the importance of hiatus hernia in the differential diagnosis of symptoms attributed to gall-bladder disease.

GRAYTON BROWN (Victoria) said that he was surprised to find no mention of severed common bile ducts in Dr. Lee's review of biliary surgery. That complication was not usually given proper publicity. He had carried out repair of the common bile duct in nine cases in the last four years. Three of the repairs had followed cholecystectomy by inexperienced surgeons for acute cholecystitis. It should be emphasized that cholecystectomy in acute cholecystitis was a very difficult operation, and inexperienced doctors should not hesitate to carry out a cholecystostomy only when operation was necessary, and leave the removal of the gall-bladder to be done later by an experienced surgeon. So far as indications for surgery were concerned, Dr. Grayton Brown said that one still could not better the late Sir Alan Newton's statement that there was one indication for cholecystectomy and that was pain.

The Trade Exhibition.

THE TRADE EXHIBITION was housed in a specially erected temporary building. The following is a short account of the several exhibits.

DRUG HOUSES OF AUSTRALIA, who occupied Stands 1 and 2, presented a range of their own and Lederle's ethical products, surgical equipment and scientific apparatus, as well as anæsthetics of Woolwich-Elliott. Some of the recent D.H.A. ethicals may be mentioned. "Cortisnuff", for hay fever, is a micronized hydrocortisone acetate powder in an inert snuff base. A small gelatin capsule ("Snuffule") holding sufficient quantity for one day's average use is placed in the plastic insufflator for inhalation into the nostril. "Climatost" is a tablet containing oral œstrogen and androgen with a medium dose of amphetamine sulphate; it is indicated for balanced gonadal hormone replacement therapy where accompanied by depressive states in the climacteric of both sexes, for post-menopausal symptoms, and for prostatic adenoma and osteoporosis. "Senokot" granules and tablets contain the active ingredients of Alexandrian senna pod B.P., stabilized and standardized. "Triosed" tablets consist of a balanced combination of short, intermediate and long-acting barbiturates which give normally about eight hours' sleep without undue drowsiness or barbiturate "hangover". Other of the older D.H.A. lines exhibited were the popular "Procillin A.S. 900,000", both syringe and needle being disposable, "Thyal" for acne and the well-known "Bitone" range.

Lederle Laboratories exhibited the following products. "Lederkyn", the newest and smallest dosage sulphonamide in chemotherapeutic history (sulphamethoxypyridazine) and "Achromycin V", an improved, buffered form of tetracycline. "Achromycin Ophthalmic Oil Suspension" (1%), which is indicated in trachoma and ocular infections caused by a wide range of organisms, providing optimal dispersion and more rapid diffusion into the conjunctival sac, and is ideally suited for mass treatment in these conditions. "Varidase", a combination of streptokinase and streptodornase, for the dissolution of blood or fibrin clots and the liquefaction of pus; it may be used locally or intramuscularly. "Miltown" tablets (meprobamate), a tranquillizer and muscle relaxant without narcosis, with no specific effect on blood pressure, and with no influence on autonomic regulatory mechanisms. "Diamox" (acetazoleamide), an established oral diuretic. The Lederle vitamin range included the following: "Lederplex" capsules and liquid (*B*-complex), "Vi-Magna" Capsules (multi-vitamins), "Gevral" capsules (geriatric vitamin-mineral supplement), "Pre-Natal Capsules" (dietary supplement during pregnancy and lactation), "Perihemin" capsules (for the common hypochromic and hyperchromic anæmias).

A recently added Woolwich-Elliott product shown was "Frezan" (dichlorotetrafluoroethane) in an aerosol-type can, a non-inflammable and non-explosive refrigerant anæsthetic; it should prove of interest to both the dermatologist and the general practitioner for use in skin planing and removal of warts and other blemishes. Established Woolwich-Elliott products were anæsthetic ether, ethyl chloride and amyl nitrate capsules.

D.H.A. Surgical displayed a "Zimmer" (all rubber) walking heel for leg plaster casts, a "Hyfrecator" for electro-desiccation, fulguration and coagulation, and a Kuhlmann traction apparatus.

WILD INSTRUMENT SUPPLY COMPANY PROPRIETARY, LIMITED, of 137 Bayswater Road, Rushcutters Bay, Sydney, displayed a comprehensive range of modern microscopes made by the world-famous Swiss optical company, Wild Heerbrugg, Limited. The following instruments were included. The large research stand M20 KGS has built-in illumination and "Wild-Fluotar" (semi-apochromatic) objectives. The stereo-microscope M5 has magnifications 6, 12, 25 and 50 times, available by rotating a built-in magnification selector, and is notable for its long-working distance (96 millimetres), flat field, depth of focus and modern design. Medium research stands M10 BK have phase contrast, and also "Wild Varicolor" phase contrast; in the latter the use of inclinable interference filters allows the phase shift to be changed from positive to negative, to select the best effect for the particular specimen under observation. Routine laboratory microscopes M11 BRFL are both monocular and binocular. An outstanding feature of the Wild M11 stand is the steel hood with carrying strap in place of the conventional wooden cabinet. The low-voltage microscope lamp has a tapped transformer giving two, four, six and eight volts. The light source is a six-volt 30-watt bulb, in centring and focusing mount, with condenser and iris diaphragm. This is an excellent lamp for phase contrast, dark-field and photomicrography. Wide field optics consisted of "Wild Plan Fluotar 3×", with exceptionally flat field, wide field eyepieces, and a special condenser designed to fill the very wide field with uniform illumination. This equipment is ideal for the examination of stained sections. Accessories shown also included "Micromag" electromagnetic fine adjustment for extremely fine focusing, a dark-field condenser, a photoelectric exposure meter for photomicrography, a filar micrometer eyepiece, an "Abbe" test-plate, filters, both interference and ordinary glass, and attachable photomicrographic cameras. Wild instruments and microscopes are noted for their advanced design to give convenient operation, their precision workmanship, and their excellent optics.

THE COMMONWEALTH INDUSTRIAL GASES, LIMITED, who have subsidiaries in all States, displayed a wide range of modern anæsthetic, oxygen therapy, resuscitation and suction equipment on a stand of contemporary design at Stands 5 and 6. The main items were as follows. Oxygen and nitrous oxide was piped at a constant reduced pressure from manifolded cylinders located behind the display. Non-interchangeable, self-sealing outlets recently developed with novel features were installed. The C.I.G. Type A/5 apparatus was connected to this system. This apparatus has unique safety features, ensuring adequate oxygen at all times, and is extensively used for the relief of pain in childbirth throughout Australia. Piped vacuum having a twin suction jar unit was featured. The Bennett I.P.P.B. Unit for the treatment of respiratory and pulmonary disorders attracted much interest. This unit at the slightest inspiratory effort inflates the patient's lung with oxygen or oxygen-air mixtures to an indicated pressure adjustable up to 30 centimetres of water. Any aerosol, as prescribed, can be administered through the nebulizer. A hand-operated switch allows resuscitation, or an adjustment is available to provide automatic cycling. The Beaver Respirator, Mark II, is electrically operated and designed for prolonged controlled respiration. Functions are adjustable, the speed between 10 and 40 respirations per minute, tidal volume between 250 and 1400 cubic centimetres, and the inflation pressure up to 30 centimetres of water. It can also be hand operated. The E. & J. Portable Resuscitator was regularly demonstrating its agility in providing automatic resuscitation, visible through the "plastic chest" of a demonstration doll. The R.M. Resuscitator operates from an oxygen supply by the rhythmic pressing of a button. The Both "Port-O-Cot" is newly released, for transporting sick babies, after successfully undergoing rigorous testing. It operates from 230-volt A.C. or battery systems of 6 or 12 volts D.C. Other voltages can be arranged specially for function from aircraft systems, etc. Constant temperature, humidity or oxygen concentration is provided. The Both "Insul-Cot", Mark II, embraces the latest developments for the nursing of premature and feeble babies. The Mira

Oxygen Analyser is of robust design for checking accurately oxygen concentrations in therapy applications. The anæsthetic range comprised the C.I.G. "Midget", which is versatile, yet exceptionally compact, lightweight and portable, the Gillies III Portable, which has rotameters for four gases and has a built-in circle absorber and ether vaporizer, the Boyle "H" Apparatus, which is almost universally used in hospitals and has a mobile tray fitted with the Boyle Circle Absorber, and the Pedestal Model Boyle and Gillies Apparatus, which is compact for use in hospitals where space is limited. The oxygen therapy range included flowmeters, humidifiers, disposal polythene facemasks, catheters and other sundry items.

ROCHE PRODUCTS PROPRIETARY, LIMITED exhibited the following products on Stand 7. "Gantrisin", the single, soluble, wide-spectrum sulphonamide, is effective against a wide range of Gram-positive and Gram-negative organisms; it is also available in the form of eye drops and ointment for topical application. "Bepanthen" has as its active substance panthenol, the alcohol corresponding to pantothenic acid; it is used topically in the treatment of varicose ulcers, bed-sores, burns, slow-healing wounds, anal fissures and cracked nipples, and systemically in the treatment of stomatitis and paralytic ileus. "Marsilid" iproniazid has been shown to have anti-tuberculosis properties similar to isoniazid. Recent experimental work has been directed to the use of "Marsilid" in the treatment of various forms of mental depression. "Romilar" expectorant syrup contains dextromethorphan with ammonium chloride. "Esanin", neurovegetative regulator, is a combination of a sedative, an antispasmodic and a mild central stimulant.

F. H. FAULDING AND COMPANY, LIMITED, occupied Stand 8. The following Faulding products were shown. Penicillin for injection was presented (*a*) as "Aquacillin 5cc", containing 300,000 units per millilitre of specially prepared procaine penicillin in aqueous suspension, supplied in rubber-capped "drain clear" vials, and (*b*) as aqueous suspensions packed in convenient disposable packs which permit aspiration—"Aquacillin 400,000", "Aquacillin 600,000" and "Megacillin 1,000,000". Penicillin for oral administration was presented as penicillin V (oral phenoxyl methyl penicillin), each tablet containing 130 milligrammes (200,000 units). "Evactil" is a new treatment for constipation; each soft gelatin capsule contains 60 milligrammes of di octyl sodium sulphosuccinate. "Pentone" is a short-acting hypnotic with prolonged sedation. "Pectolin" is a cough syrup with prolonged antitussive activity containing pholcodine. "Koagel", an intestinal absorbent for use in the treatment of enteritis, colitis, dysentery and diarrhœa, contains colloidal kaolin and pectin. "Vitaphen", a combined tonic and sedative tablet, effective in cases of vomiting of pregnancy and radiation sickness, contains vitamin B_1, vitamin B_2, pyridoxine hydrochloride, nicotinic acid and phenobarbital. The following products of C. H. Boehringer Sohn, Ingelheim am Rein, Germany, were also shown: "Preludin", the appetite-controlling agent that produces no mood swing; "Finalgon" ointment, the safe prescription with an intense neuro-vascular action. Also shown was a product of Laboratores Ed. Fromont, "Neutrogena" soap—the soap which makes neutral aqueous solutions. It does not alter the pH of the skin and so is an adjunct in the treatment of skin conditions when alkaline solutions must be avoided.

PFIZER PROPRIETARY, LIMITED, on Stand 9, showed a series of products. "Synermycin", the new enhanced broad-spectrum antibiotic, combining tetracycline with the antibiotic oleandomycin, is characterized by increased potency, widest known antimicrobial range, minimal side effects and delay in emergence of resistant organisms. "Terramycin" oral suspension is a pre-mixed, pleasantly flavoured dosage form of oxytetracycline for pædiatric and geriatric infections. "Tetracyn V" is a new activated form of tetracycline buffered with sodium metaphosphate for higher blood levels. "Deltacortril", a brand of prednisolone with powerful antiphlogistic, antirheumatic and antiallergic properties, is three to five times more potent than hydrocortisone and exhibits a marked lessening of side effects. "Atarax", a brand of hydroxyzine hydrochloride, produces a calming effect without disturbing mental acuity, stabilizes the emotions, reduces nervousness and relieves anxiety; it is notably free of side effects.

BOOTS PURE DRUG COMPANY (AUSTRALIA) PROPRIETARY, LIMITED, occupied Stand 10. The exhibit displayed both pharmaceutical products and surgical instruments. Amongst the pharmaceutical preparations shown for the first time were "Fenox Cough Arrestive" and "Fenox Nasal Spray", both containing the vasoconstrictor "Phenylephrine". The "Cough Arrestive" has a comprehensive formula including pholcodine, glycerin and menthol. The "Viule" technique of injection was prominently displayed, and new items of "Viule" equipment were highlighted. The "Viulon" needle was specially demonstrated to hospital personnel. This needle was developed as a low-cost disposable needle for hospital use. Boots anticoagulant range was displayed and included "White Heparin" and "Oragulant" (diphenadione), a new oral anticoagulant at present undergoing clinical trial at a number of public hospitals. Both exhibits showed graphs of the duration of effect of the drugs. The therapeutic effects of "Nulacin" for the treatment of peptic ulcer and hyperacidity and "Stabillin-V" (phenoxymethyl-penicillin) were both demonstrated in graph form. "Sweetex", the non-Calorie sweetener, was distributed from the stand to members of the medical profession interested in using the product in their coffee which was available from the adjacent Nestlés stand. Among the Charles Thackray range of surgical instruments was a new selection of thoracic instruments specially assembled for the Congress, which were particularly interesting to many surgeons. The Boots stand was carried out in a grey motif and used locally produced display cabinets. The Congress exhibit was attended by Mr. Greg. K. Suter, a director of the company, Mr. Lloyd Cannon, the Tasmanian representative, and Mr. Don. Badyk, of Melbourne.

BRITISH SCHERING, LIMITED, exhibited "Neo-Mercazole", "Oblivon-C", "Oblivon", "Neutradonna" and "Orasecron". The first two products excited particular interest, "Neo-Mercazole" because of the reference to it during the first plenary session, and "Oblivon-C" because of the clinical reports about it in the (then) current edition of *The Lancet*. "Neo-Mercazole", "the most satisfactory antithyroid drug so far available", which is available under the *Pharmaceutical Benefits Act*, is presented in scored tablets, each containing five milligrammes of carbimazole, in containers of 100 and 500. "Oblivon", the preparation that specifically allays the mental and physical accompaniments of fear and apprehension, was the first of this class of drugs to be introduced, and over the five years that have followed it has earned for itself an important place in therapeutics by virtue of its safety and freedom from toxicity. "Oblivon" is available as sea-blue capsules, each containing 250 milligrammes of methylpentynol in containers of 4, 25 and 100, and as a sea-blue elixir containing 250 milligrammes of methylpentynol in each teaspoon (four cubic centimetres) in bottles of 25, 100 and 500 cubic centimetres. "Oblivon-C", the long-acting derivative of "Oblivon" for continuous therapy in functional complaints and psychosomatic disorders, is the only one of the so-called tranquillizer group of drugs that results entirely from British research and development. "Oblivon-C" is available as ovets, each containing 100 milligrammes of methylpentynol carbamate, in containers of 25 and 100. "Neutradonna", antispasmodic and antacid to relieve pain and counteract hyperacidity in peptic ulcer, is available as powder in containers of 100 grammes and as tablets in boxes of 60 (five packets of 12). "Orasecron", a form of combined œstrogen-progesterone therapy, providing an oral means of pregnancy diagnosis, and a treatment of secondary amenorrhœa and habitual abortion, is available as tablets in containers of 10, 25 and 100. Other

British Schering products featured were "Enterocid", "Acetocid" eye preparations and "Acetocid" nasal spray.

SIGMA COMPANY, LIMITED, occupied Stand 15. The exhibit presented a brief summary of this company's progress in the development of antibiotics, with particular reference to "Cilicaine Suspension", the only aqueous procaine penicillin suspension available in Australia without inert suspending agent. "Cilicaine Suspension" therefore possesses unique advantages in that secondary pain and subcutaneous nodules are eliminated. The Sigma liaison with overseas pharmaceutical research organizations was featured, and some products, now manufactured in Australia under licence, were on display. Some formulations of "Trichomycin", the only anti-fungal, anti-protozoal antibiotic, were displayed. "Trichomycin" may be used both topically and systemically for the control of trichomonal, monilial, trichophyton and microsporan infections. The complete range of "piperidols" (synthesized from oathulls) were displayed. These were: "Dactil", for biliary dysfunction; "Piptal", for peptic ulcer; "Tridal", for general gastric dysfunction; "Pædiatric Piptal", for infantile colic; and "Cantil" for colonic disturbances, including colitis and diverticulitis. An entirely new alkaloid extraction of *veratrum viride* was presented in "Unitensen" formulations. "Unitensen" now provides reliable hypotensive action without emesis and hitherto associated side effects. A range of formulations containing neomycin and similar antibiotics reserved for topical use included "Siguent" neomycin for dermatological use, "Siguent" ophthalmic bacitracin and neomycin for ophthalmic use, and "Spersin" insufflation for dry dressings and burn therapy. The Sigma exhibit also displayed a "T.V." transparency of the Melbourne head office block. This, together with other illustrations outlining various testing and manufacturing procedures at Sigma, was a source of interest to many doctors, as well as pharmacy and medical students. Sigma Company, Limited would like to thank all doctors who visited Stand 16 and discussed some of the newer Sigma pharmaceutical developments with Mr. Peterson or Mr. Rodgers.

BERLEI, LIMITED, which occupied Stand 16, made it possible for visitors to examine in detail the Camp-Varco Tradition Belt, a light-weight apparatus in great demand in the United Kingdom and U.S.A. in the treatment of back pains; it is greatly appreciated by patient and nurse, as the patient can move easily in the bed. Also shown were the full ranges of Camp-Berlei supports for men and women, well-made, well-designed supports for the conservative treatment of back weakness and as post-operative and obesity supports. The display of the "Identical Breast Form" served to introduce it to many new doctors, and to show its physical and psychological value to the woman who has had a mastectomy. Berlei's full range of prenatal "step-ins" was shown in their new, attractive, light-weight materials. The famous maternity breast support, No. 891, was shown in its two new cup fittings.

JOHNSON AND JOHNSON had an attractive display featuring surgical dressings, sutures and "Fenwal" plastic, disposable, blood transfusion equipment. The central point of the display demonstrated the many advantages of the "Fenwal" system for the collection, processing and administration of blood. It is only a few years since the advent of plastics to replace glass, and the "Fenwal" technique offered longer red cell survival for blood transfusions. "Fenwal" now offers an aseptic and simplified method of providing whole blood or its major components as prescribed for the patient. Rapid infusion to meet emergency becomes routine without danger of air embolism. A wide range of absorbable and non-absorbable suture materials, together with the comprehensive selection of gastro-intestinal, eye, cuticular and cardio-vascular "Mersutures", provides for every surgical requirement. The dressings section featured the selective range of sponges and swabs—"Raytec" (X-ray detectable) abdominal sponges and throw-aways for the operating table, green gauze sponges for the anæsthetic table, plain three by three and four by four sponges *plus* the new "Topper" composite sponge (cotton wool filmated gauze with cellulose tissue filler) for ward use and minor dressings. Other recent additions to the dressing range included "Masslinn" disposable clinical sheets, hospital underpads, "Kling" conforming bandages and pre-sterilized non-adhering dressings.

ABBOTT LABORATORIES PROPRIETARY, LIMITED, on Stand 18, showed some new additions to their wide range of pharmaceutical products. "Harmonyl", the new rauwolfia derivative, has established itself as the drug of choice in conditions ranging from mild anxiety to major mental illness and hypertension; it combines the potency of the rauwolfia drugs with significantly fewer and milder side effects. "Sucaryl", the non-caloric sweetener with no bitter or metallic after-taste, is already well known to Australian medicine in its tablet form; it is stable as a cooking agent in both tablet and solution form. For peptic ulcer treatment, Abbott has introduced "Tral", a new anticholinergic drug that produces optimum therapeutic effects with negligible side effects. In addition to these new preparations, the Abbott exhibit incorporated information on many of its other well-established pharmaceuticals, covering nearly every phase of modern medicine.

WM. S. MERRELL (PROPRIETARY), LIMITED, of 104 Mount Street, North Sydney, occupied Stand 19B.

RECKITT AND COLMAN (AUSTRALIA), LIMITED, exhibited a number of products on Stand 21. "Dettol" is an antiseptic of high germicidal efficiency and rapidly bactericidal against a wide range of pathogenic microorganisms, including *Streptococcus pyogenes* and *Staphylococcus aureus*. "Dettol's" efficiency is well maintained in the presence of blood and pus. It is pleasant to use, is an excellent deodorant and is a useful detergent. "Dettol" is compatible with ordinary soaps. "Surgical Dettol" is specially formulated for pre-operative skin disinfection. It is in alcoholic solution ready for immediate application to the skin. It incorporates a colouring compound to define the area treated and dries rapidly, leaving the skin in a non-slippery condition. It is available in two colours, orange and blue. "Dettol Obstetric Cream" contains 30% "Dettol" and is a most suitable antiseptic for use in obstetrics. "Disprin" is a soluble, substantially neutral aspirin in stable form. "Disprin" tablets readily react in water to form a palatable solution of calcium aspirin. Since "Disprin" is soluble, it is more rapidly absorbed and consequently more speedy in its clinical effect. Moreover, by virtue of its solubility, "Disprin" is unlikely to irritate the stomach. "Codis" presents a familiar grouping of analgesic drugs: aspirin, phenacetin, codeine phosphate, with an important advantage—the "aspirin" in "Codis" is rendered soluble, as in "Disprin". "Codis" is recommended for all those conditions for which *Tab. Codein Co.* B.P. would normally be prescribed, with the added advantages of more rapid relief and far less likelihood of gastric irritation due to aspirin intolerance. "Glucona" is a pleasantly flavoured, lightly carbonated glucose drink containing 15% dextrose B.P. with the addition of thiamine. "Glucona" represents a new and improved form of administering glucose orally, and because of its sparkling effervescent nature is better tolerated and much more palatable and refreshing. "Glucona" is recommended for the patient on a fluid or light diet and during convalescence, and in the treatment of nausea, physical shock, acidosis and biliousness.

BURROUGHS WELLCOME AND COMPANY (AUSTRALIA), LIMITED, on Stands 22 and 23, exhibited a range of ethical pharmaceutical preparations, several of which are the result of original research and development in the Wellcome Laboratories. Of outstanding interest were the following. "Aerosporin" polymyxin B sulphate, a unique antibiotic highly bactericidal against a wide variety of Gram-negative organisms and preeminent against *Pseudo-*

monas pyocyanea, is issued as freeze-dried material from which injection solutions are prepared for the treatment of systemic infections; it is presented in a variety of forms, either alone or in combination with other antibiotics, to provide effective therapeutic agents for use in otic, ophthalmic and topical infections. "Lanoxin" digoxin, the cardiac glycoside of choice discovered in 1930 by workers in the Wellcome Laboratories, is now available in tablet form for oral digitalization or maintenance: as injection solution, requiring no prior dilution, for emergency digitalization, and as pædiatric elixir, for infants and children. "Methedrine" methylamphetamine is for use whenever depression is a problem and as an adjunct in the dietary management of obesity. "Migral" ergotamine compound is for effective oral treatment of migraine. "Marzine" cyclizine hydrochloride, a most effective anti-emetic, is particularly valuable in travel sickness of all types and in vertigo; the compound with pyridoxine, "Maredox", gives outstanding relief in pregnancy sickness. "Physeptone" methadone is a powerful synthetic analgesic which may, in almost all cases, replace morphine with advantage. "Neo-Epinine" products, containing isoprenaline, are issued in a range of forms to meet the needs of all asthmatic patients.

GENERAL MILK COMPANY (AUSTRALIA), manufacturer of the world-famous "Carnation Milk", made its second appearance at an Australasian Medical Congress in its as yet relatively young career in this country. Australian head office and condensery for this company are situated in Victoria, but company representation and distribution of "Carnation Milk" is Australia-wide. An attractive stand predominantly featuring the Company colours of red, green and white, and high-lighted by choice red carnation blooms, shown in Hobart, had eye-catching appeal. No extravagant claims were made for the use of unsweetened evaporated milk in infant feeding. Undeniably first choice of both mother and baby is natural feeding; but when for some reason or other this is not possible, unsweetened evaporated milk, because of its properties and mode of processing, must be given due consideration. This applies not only where the feeding schedule is normal, but equally so in the feeding of premature babies and those infants whose formulæ require special modification. "Carnation Milk" is a sterile milk from chosen dairy farms closely supervised at all stages of processing. Its guaranteed composition and liquid form readily permit modification or inclusion of additives to suit the requirements of the individual baby. A feature was made of the two standard packs, the 14½ ounces weight (13 fluid ounces) and the six ounces weight (5½ fluid ounces), equivalent, respectively, to 30 fluid ounces and 12 fluid ounces of reconstituted cow's milk. Literature available to members of Congress and visiting members of the nursing profession included: (i) "Modern Infant Feeding with Unsweetened Evaporated Milk", a booklet especially compiled for medical and nursing personnel; (ii) a 12-month feeding schedule, a handy guide in the form of a plastic card suitable for office desk and wallet; (iii) colourful folders showing pictorially the standard and terminal heat methods of preparing a full day's feeding formula; (iv) reprints of a recent *British Medical Journal* article by an English pædiatrician extolling the use of evaporated milk in infant feeding, as instanced by experience in a group of English hospitals, and domiciliary usage.

E. R. SQUIBB AND SONS occupied Stands 26 and 27. The House of Squibb celebrated its centennial year, 1958, with a display designed to introduce several developments entirely new to Australia. It is interesting to note that in 1858, when anæsthetic ether was the new miracle drug of the day, Dr. Edward R. Squibb established a modest laboratory in Brooklyn, N.Y., to supply anæsthetic ether and pure medicinal drugs to the army, navy and medical profession. In the beginning he signed each label to certify that the contents had been carefully selected, processed and tested for uniformity, purity and efficacy. In 1954 the products of Squibb research became freely available in Australia, and some of these products were high-lighted on colourful panels displayed in the Squibb stand in Hobart. Those given particular prominence among products already well known in Australia included the following: "Mycostatin", the first safe antifungal antibiotic now available in oral and vaginal tablets, ointment and oral suspension to combat the growing incidence of monilial conditions of all forms. "Raudixin" whole root rauwolfia, which is often preferred to reserpine because of the additional activity of the whole root, which also lacks the excess sedation of the single alkaloid. "Graneodin" ointment—a neomycin-gramicidin combination which has been accepted as one of the most widely used topical antibiotic therapies, without the danger of sensitizing the patient to antibiotics used systemically at a later date. There appeared to be exceptional interest in two new developments which were introduced during the Congress. The first was "Kenacort", Squibb triamcinolone, a new derivative of prednisolone; while being used for the same indications as prednisolone, "Kenacort" apparently achieves similar results with no sodium or water retention and far less gastric irritation, does not cause euphoria, and is safe for use in patients with cardiac disorders. The second was a new antifungal antibiotic for infusion, amphotericin B, a product of Squibb research to be known as "Fungizone", which has already achieved dramatic results in deep mycotic conditions including torulosis. These new developments indicate an excellent start for the second century of the House of Squibb.

WINTHROP LABORATORIES used its double stand to present a selection of the company's outstanding products. These fields were clearly distinguished both by informative cards and, more particularly, by the novel type of contemporary designed stands which clearly differentiated the groups of products and also facilitated product identification. The stands of polished wood, mounted on black metal legs, were illuminated with modern flexible spotlights. The centre piece featured "Neo-Synephrine", the company's vasoconstrictor. Packs of each "Neo-Synephrine" dosage form were displayed, illustrating this versatile agent's use in five specialized fields: as a vasoconstrictor in shock; as a mydriatic in ophthalmology; as an oral bronchodilator in asthma and hay fever; to reduce swelling in hæmorrhoids; and, in pride of place, the nine intranasal dosage forms for colds, sinusitis and allergic rhinitis. Other well-known products displayed on the Winthrop stand included "Fergon", the preparation for oral iron therapy; "Monodral", the latest anticholinergic; "Levophed", the life-saving potent pressor hormone; "Milibis" vaginal suppositories, outstanding in the treatment of trichomonas and monilial vaginitis; and "Apolamine" and "Apolamine" with phenobarbitone, products which bring welcome relief from nausea and vomiting. Several of the new Winthrop lines which have rapidly achieved prominence were also on display: "Panadol", the new non-irritating analgesic which contains no aspirin, no phenacetin and no codeine; "Mycardol", for *angina pectoris*; "Zalkon", a bactericidal antiseptic; "Telepaque", an oral cholecystopaque; "Hypaque", an excretory urographic radiopaque; "pHiso-Hex", the new antiseptic sudsing detergent. Considerable interest was focused on this last-mentioned product, which is a new synthetic sudsing detergent containing hexachlorophene. "pHisoHex" has already proved itself as a surgical scrub, patient-"prepping" agent, and antibacterial cleansing agent in dermatological conditions. A technique of particular note in the Winthrop exhibit was the manner in which "Panadol", the newest analgesic development in Sweden and England, was exhibited. Another interesting exhibit on this stand was that for "Alevaire", the aerosol detergent which is useful (and in fact in some cases life-saving) in the liquefaction of thickened pulmonary secretions. This working display depicted the types of apparatus used in the administration of "Alevaire", including a compressor, masks and nebulizers. Not seen on the stand, but nevertheless well received, were five Winthrop colour films which were shown in the Congress Theatrette. These films, which have been seen widely throughout Australia during specially organized screenings, were: "Post-Operative Aerosol Therapy", "Preparing for

Surgery", "Resuscitation of the Newborn", "Operative Cholangiography" and "Contrast Radiography and Cinefluorography of the Genito-Urinary Tract".

KODAK (AUSTRALASIA) PROPRIETARY, LIMITED, occupied Stands 30 and 42. The purpose of this exhibit was to give emphasis to the importance of radiography and photography in serving the advancement of medicine. It featured the products of Kodak (Australasia) Proprietary, Limited, manufacturers of the following films for use in the X-ray field: "Kodak Blue" brand X-ray film for use with intensifying screens, "Kodirex" X-ray film for the direct non-screen technique, "Photoflure" panchromatic film for photoradiography, industrial X-ray film for use in industrial radiography. On display was seen X-ray processing room equipment supported by a number of overseas and local examples of outstanding radiography. Particularly interesting in this group was an actual size radiograph of a fully grown woman. Also of interest was a series of prints featuring "The Use of X Rays in the Museum"—a most unique display of radiographic studies in the fields of painting, archæology, ceramics, biology, entomology, philately, Egyptology, etc. The important field of clinical photography was represented by a striking display of illuminated colour transparencies from both local and overseas sources. The locally produced work was outstanding. Each transparency was photographically enlarged in full colour from 35-millimetre "Kodachrome" originals. One, for instance, was enlarged to the fantastic size of 30 inches by 40 inches. Such greatly enlarged transparencies are invaluable for reference and study by surgeons and physicians as well as for medical training. In fact, more and more hospitals and clinics are, every day, documenting their cases with the aid of photography—still or movie, black and white or colour. Processing methods and chemicals are all important, both in radiography and photography, and it was seen from the standard of work displayed, as well as the type of equipment, that here in Australia we are well to the fore in world standards. Fully qualified technical representatives were available at the Kodak exhibit to give advice and information for the duration of the Congress—also available at all times throughout the Kodak organization in Australia and New Zealand.

THE NESTLÉ COMPANY (AUSTRALIA), LIMITED, occupied Stand 31. The stand contained those products of specific interest to the medical profession used in the field of infant nutrition. These products included "Lactogen", "Nestogen", "Maltogen", "Ideal" evaporated milk and "Nesmida". "Lactogen" is a standardized, homogenized, spray-dried, modified milk formula. It is a time-proven infant formula when artificial feeding is necessary. "Nestogen" is half-cream, homogenized, spray-dried milk. The reduction of Calories brought about by the decrease in fat content has been restored by the addition of mixed carbohydrates, dextrin-maltose and sucrose. One pressed level medicinal tablespoon of both "Lactogen" and "Nestogen" powders contains approximately 40 Calories. "Maltogen", the dried extract of malt sugars with vitamin B_1, may be recommended as an alternative source of sugar, and is also of proven value for the correction of constipation in infants. "Ideal" evaporated milk, a milk from which little more than half of the water has been removed by evaporation, is homogenized and packed in hermetically sealed tins and sterilized under pressure. The sterilization process used in the manufacture of "Ideal" milk affects the protein in such a manner that some infants who are allergic to cow's milk in other forms can tolerate "Ideal" milk. "Nesmida" (Nestlé) is a protein hydrolysate of milk protein (60% lactalbumin, 40% casein) providing a mixture of amino acids in their natural proportions for oral administration.

Members of the Congress availed themselves of the service provided by the Nestlé Company at the "Nescafé" lounge, where "Nescafé" instant coffee was served, either black or creamed with "Ideal" evaporated milk. This service was much appreciated.

THE PHARMACEUTICAL ASSOCIATION OF AUSTRALIA, publishers of "The Australian Pharmaceutical Formulary" (A.P.F., 1955, Eighth Edition), occupied Stand 32. The exhibit, in the main, featured the 1955 "Australian Pharmaceutical Formulary", together with a representative group of products prepared according to formulations laid down in that publication. Decorative swan-necked carboys and a specie jar, the traditional symbols of pharmacy, added emphasis to the fact that the exhibit was representative of the professional side of pharmacy. The Pharmaceutical Association of Australia (P.A.A.), the Commonwealth organization representing the pharmaceutical societies of all Australian States, would like to acknowledge with gratitude the willing and courteous cooperation of the administrative bodies responsible for the success of the Congress.

The CIBA exhibit comprised a light metal stand, which featured at eye level five of the company's speciality tablet products. Beneath these were photographic representations of five manufacturing and assaying processes at the laboratories in Basle, Switzerland. Central prominence was given to "Doriden", a new non-barbiturate hypnotic without after-effects. Flanking the "Doriden" display were the products "Ritalin" and "Entero-Vioform". Concerning the former, stress was laid on its mild stimulation without significant effect on blood pressure or appetite. Considerable interest in "Ritalin" was displayed by Congress members. A pictorial exhibit, cartographically depicting the continents of Europe, Asia and Australia, was the motif for "Entero-Vioform", an intestinal antiseptic for the treatment of diarrhœas. At each side of the main tubular metal stand were panels hinged and set at an obtuse angle, one featuring "Adelphane", the antihypertensive with dual site of attack (central and peripheral), and composed of "Serpasil" and dihydrazinophthalazine. The other gave an explanation of "Antrenyl Duplex", a vagus inhibitor, with a technical device, ensuring a two-stage action within the tablet—an immediate effect from the outer layer and a delayed absorption from the central core—thus producing a combined effect lasting from eight to twelve hours. A low table, upon which relevant literature and samples were placed, and a chair at each side completed the stand, for which a back-drop of brown and white curtains was used. The floor was covered with brown mottled felt. Ciba Company would like to express its appreciation to all those who assisted in the erection of the stand in Hobart.

IMPERIAL CHEMICAL INDUSTRIES OF AUSTRALIA AND NEW ZEALAND, LIMITED, exhibited a few of the products recently added to their sales range. These included the popular "Hibitane" series and featured the antiseptic cream, obstetric cream, antiseptic lozenges and "Hibitane" concentrate. From the attention paid to these formulations it was apparent that the value of "Hibitane" as a bactericidal agent is already becoming accepted and appreciated by the medical profession. The combination of "Hibitane" (chlorhexidina) and "Cetavlon" (cetrimide) was presented in the form of "Savlon" antiseptic liquid in a packing designed for popular public use. "Fluothane", the novel inhalation anæsthetic, was also the subject of much interest, and its recent release to anæsthetists marks another step towards safety against fire and explosion hazards in the operating theatres.

COMMONWEALTH SERUM LABORATORIES, on Stands 35 and 36, presented a display showing poliomyelitis vaccine production, as well as penicillin V for oral administration and insulin preparations.

W. RAMSAY (SURGICAL) LIMITED'S main displays were those of its important American medical book agencies: those of Messrs. W. B. Saunders of Philadelphia, The Year Book Company of Chicago, C. V. Mosby of St. Louis, and those of Medicon G.M.B.H. of Germany (surgical instruments), and R. J. Beck and Company, London (microscopes). Copies of all the latest

text-books issued by the companies mentioned were on display, as well as sample copies of *Medical Clinics of North America* and *Surgical Clinics of North America*, which each appear six times yearly attractively bound in either paper or cloth. Copies of the English language *German Medical Monthly* were also on display, as well as some copies of "The Story of the Peptic Ulcer", a book for sufferers of this complaint written by a medical man for the general public. A comprehensive layout of fine stainless steel intruments, mainly by the company's German principal, Messrs. "Medicon", of Tuttlingen, were on display, as well as instruments of most of the reputable British and continental makers. As the Australian representative of Messrs. R. and J. Beck, of London, the company displayed a binocular microscope and intensity lamps; also showing was a Hartridge reversion spectroscope. An interesting item on display on this stand was the "Uni-Vac" suction apparatus, which appears to be the only one which has passed any flame-proofing tests up to the Australian specification, tests having been recently carried out by the State Electricity Commission of Victoria. The machine on display was the prototype only, and certain improvements are being incorporated in the later production of the machine. A range of the nylon plastic syringe "Kigliss" was shown; these syringes have had particular application to veterinary work.

ANDREWS LABORATORIES' stand comprised six tubular steel units which supported displays of such products as "Biocitrin", "Calcipen", "Chloroquine", cortisone preparations, "Hydromyxin" nasal spray, "Neotracin-Delta", "Oricur" and "Trisulfa". "Laminex"-covered shelves, also supported by these units, were used to demonstrate the "Eldon Card" method of A B O and Rh_0(D) blood grouping, the "Universal" electric thermometer for accurate temperature control with full range of applicators used, and the "Ambu" resuscitation equipment comprising a foot-operated suction pump and hand-operated or foot-operated "Ruben Bag" resuscitator. The bamboo blinds and seagrass mat gave the exhibit an air of informality which the visiting Congress members seemed to appreciate. Andrews wishes to thank those members who visited their stand and to congratulate the organizing committee on the successful exhibition.

THE AMES COMPANY (LONDON), LIMITED, whose Australian agents are Schaffer and Company (Victoria) Proprietary, Limited, Melbourne and Sydney, occupied Stand 39. The principal feature of the exhibit took the form of demonstrations of the full range of Ames's simplified diagnostic urine tests. These tests are now being widely used in hospitals and by medical practitioners generally. Tests demonstrated included "Clinitest" reagent tablets, which have proven reliability for the detection and quantitative estimation of glycosuria. "Clinitest" tablets remove the need for external heating and ensure the use of a standard amount of reagent. "Acetest" reagent tablets are outstanding as a simple and quick method of detecting urinary ketone bodies. A degree of standardization is achieved which is difficult to obtain with older methods. "Clinistix" is a new enzyme-impregnated test paper which is a specific test for the detection of glucose. "Clinistix" is invaluable in routine screening as a qualitative test for urinary glucose, being extremely simple to use and requiring no equipment whatsoever. Two new tests for protein in urine were featured. "Altest" reagent tablets, containing salicyl-sulphonic acid, eliminate the need for the use of heat in routine testing. "Albustix" reagent strips will soon be available in Australia, and are an entirely new concept in testing for urinary protein, in that the presence of protein is shown by a colour change on the test strip, rather than by a precipitate in a solution. The intensity of the colour change is proportional to the amount of protein (albumin) present in the urine. Comparison with the colour scale provided enables accurate measurement of the degree of proteinuria. "Occultest" is a much improved test for blood in urine, which is reliable and extremely simple to perform. It is sensitive to a minimum concentration of 50 red cells per cubic millimetre. "Ictotest" is a simple tablet test for urinary bilirubin, which is specific and of at least equal sensitivity to the Fouchet test, while being quicker and easier to perform. The simplicity of this test renders it invaluable in the management of infectious hepatitis and in routine examinations of liver function. A colour film entitled "Urine Testing for Diabetics", featuring the use of "Clinitest" reagent tablets, was included in the Congress film programme.

THE UPJOHN COMPANY, on Stand 40, arranged its space to allow complete privacy between doctors and Upjohn senior representatives during interviews. The Upjohn Company is a completely ethical organization, whose range, in Australia, covers the cortical steroid field, certain antibiotics and a restricted range of drugs which are specific in their action. Neomycin was featured as a wide-range antibiotic in its various applications for topical and oral therapy. Erythromycin and "Albamycin", specific antibiotics, were exhibited, and technical literature about their properties was available. "Cardrase", a new non-mercurial diuretic, "Pamine" and "Paminal", chemical vagotomy agents with lowered peristaltic action, and "Orthoxine", a particularly safe and specific bronchodilator, were of general interest. The Upjohn exhibit covered every class of cortical steroid preparation, and trained staff was in attendance at the stand to assist with accurate technical advice in the safe usage of cortical steroids. Also featured was "Orthoxicol", a product which it was claimed would give adequate relief to any cough reflex, including the common cold.

MAY AND BAKER (AUSTRALIA) PROPRIETARY, LIMITED, on Stand 41, displayed recent additions to their range of preparations. "Stemetil" brand prochlorperazine maleate is chemically related to "Largactil", but differs from the original compound in a number of respects; released primarily for the treatment of migraine and of Ménière's syndrome and other labyrinthine disorders, it is also a very powerful anti-emetic, having approximately three to four times the activity of "Largactil" in this field. "Sonergan" brand promethazine-butobarbitone combination was first released for premedication for operations as it provides sedation and hypnosis; it is also indicated in general practice in cases of insomnia. "Brolene" brand dibromopropamidine isethionate ointment is indicated in the treatment of bacterial eye infections; the incorporation of dibromopropamidine in the B.P. base for eye ointments was a logical development of "Brulidine" cream, which is applied topically to infected wounds etc. "Biliodyl" brand phenobutiodil, an addition to the May and Baker range of X-ray visualizing media, is administered orally for cholecystography and cholangiography. "Rovamycin" brand spiramycin is an oral antibiotic, primarily effective against Gram-positive coccal infections. Other products exhibited included "Largactil" brand chlorpromazine hydrochloride, the ganglion blocking agent "Ansolysen" brand pentolinium tartrate, the antihistaminics "Anthisan" brand mepyramine maleate and "Phenergan" brand promethazine hydrochloride, and "Sulphatriad" brand compound sulphonamides.

Reviews.

South African Snake Venoms and Antivenoms. By Poul Agerholm Christensen, M.B. (Copenhagen), Dip. Bact.; 1955. Johannesburg: The South African Institute for Medical Research. 10¼" × 7½", pp. 136, with 43 illustrations. No price stated.

THIS book is an unusual type of review, in which most of the published information on South African snake venoms and antivenoms is closely interwoven with data taken from the author's extensive experience. The subject matter is grouped under well-chosen headings arranged in logical sequence, which makes for easy reading and easy reference.

The book opens with a brief but adequate section on zoological classification of venomous African snakes, followed by a discussion of the nature of the venom of the different species. Passing reference is made to the effects of snake venom on spirochætes, protozoa, fishes, mosquito larvæ, tadpoles, frogs, snakes, crocodiles, tortoises, lizards and scorpions. The author reveals his personal interest in bioassay in the excellent section on the estimation of toxicity of snake venoms for laboratory animals. Useful data on lethal doses of South African snake venoms have been collected from various sources and conveniently presented.

The different effects of elapine and viperine venoms are discussed in some detail, special reference being made to the various enzymes present in venoms and to in-vitro methods for their detection. This leads naturally to an account of the physical and chemical properties on which methods for purification of snake venoms and isolation of venom fractions depend. Reference is made to the stability of dried venom and venom solutions, together with the somewhat disappointing results of efforts to detoxify venom without loss of antigenicity.

Those engaged in the preparation of antivenoms will find special interest in the large section devoted to this subject. The reader here will benefit greatly from the author's long experience and understanding of the principles involved in hyperimmunization and potency assay. From studies on cross-protection by monovalent and polyvalent antivenoms, it is concluded that a polyvalent antiserum prepared against *Naja flava*, *Bitis arietans* and *Sepedon hæmachates* (ringhals) venoms would offer effective protection against bites of all of the important venomous snakes of South Africa except the mambas. These require a specific antivenom which is not yet available.

Other useful data concern the seasonal incidence and geographical distribution of snake bite in South Africa, the species responsible, the site of bites, the sex and age of victims and the death rates. The symptoms of bites by South Africa's elapine and viperine snakes differ, and treatment is modified accordingly. The author's recommendations for treatment of the former differ little from those advocated for bites by Australian venomous snakes. One important difference is that, in Australia, injection of an antihistaminic drug is recommended prior to administration of antivenom to a patient with a history of allergy.

The concluding chapters are devoted to summaries of information relating to alleged antidotes to snake bite and the use of snake venom in therapy. An excellent bibliography with over 400 entries and a well-compiled index complete the book.

This book, which contains a wealth of information otherwise most difficult to obtain, is recommended for medical libraries and for those especially interested in venoms and antivenoms. The clarity of the text, with its concise summaries of each aspect, will appeal to many who have little time to keep up to date with current literature. Although there is much that can be applied to Australian conditions, it is unlikely that the general Australian reader will find absorbing interest in its pages. A similar book on Australian snake venoms and antivenoms would have wide appeal.

Non-Venereal Syphilis: A Sociological and Medical Study of Bejel. By Ellis Herndon Hudson, M.D., D.T.M. & H. (Lond.), F.A.C.P.; 1958. Edinburgh and London: E. and S. Livingstone, Limited. 8½" × 5½", pp. 212, with 81 illustrations. Price: 30s. (English).

THIS monograph deals in particular with bejel as observed over a period of ten years (1926-1936) at a hospital clinic at Deir-ez-Zor in Syria, on the Euphrates, as well as sporadic venereal syphilis (known there as franji).

Bejel is classified as endemic syphilis and placed between syphilis and yaws. It is assumed that yaws, as it moved north from the moist tropic belt, "took on the features" of endemic syphilis, and that this in its turn became venereal syphilis in urban civilization, where the standard of living and community hygiene rose. In urban civilization the disease became connected with sexual behaviour. In the Bedouins around Deir-ez-Zor, bejel was not connected with sex. The child is the chief reservoir of yaws and endemic syphilis.

The author, from his long and wide experience, advocates "the recognition of syphilis and yaws as components of world-wide treponematoses", and has used bejel "as an example of endemic syphilis which draws them together". He considers that the *Treponema pallidum* is the ætiological agent of both yaws and syphilis, and that bejel and syphilis are the same disease. The variation in conditions results from sociological environment.

This book, which is written in free-flowing literary style, is a valuable contribution to the literature concerning endemic syphilis. In view of the mass treatment campaigns against yaws and syphilis being carried out at present by the World Health Organization, in cooperation with local governments and the United Nations International Children's Emergency Fund, in which patients are numbered in millions, this monograph should be known to all public health authorities.

Biochemistry and Human Metabolism. By Burnham S. Walker, M.D., Ph.D., William C. Boyd, Ph.D., and Isaac Asimov, Ph.D.; Third Edition; 1957. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9" × 6", pp. 944, with illustrations. Price: £6 12s.

IN 1952 a book on biochemistry with an entirely new approach to the subject appeared, entitled "Biochemistry and Human Metabolism", by B. S. Walker, W. C. Boyd and I. Asimov. A second edition appeared in 1954, and a third is now available. In a review in this Journal of the first edition, it was pointed out that there was a disproportion in the treatment of different subjects. There still is in the third edition. For example, there are 94 pages on proteins and protein structure, all interesting, but far beyond the requirements of a medical student. In addition there are 55 pages on protein metabolism and starvation. On cancer there are 20 pages, and 38 pages on reproduction and heredity. There is more detail in this book than in any other book on biochemistry, and the cover of subjects is very wide. The changes between the first and the third editions are numerous, making the third edition a much better book. It is a very sound book, but is far too detailed for a medical student. It would be useful for an honours student or a post-graduate student in biochemistry. It would also be very useful as a reference book for a medical man who wished to have at hand the present knowledge of any aspect of biochemistry.

Bing's Local Diagnosis in Neurological Diseases. By Webb Haymaker, M.D., with chapters by Richard G. Berry, M.D., Bernard S. Epstein, M.D., and Paul I. Yakovlev, M.D.; Second Edition, translated, revised and enlarged from the fourteenth German edition; 1956. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 9½" × 7", pp. 478, with 225 illustrations. Price: £9 4s. 3d.

ONE of the early milestones in the present trend towards introducing more clinical material into anatomy and physiology was the publication of Bing's "Local Diagnosis" in 1909; since then, through its 14 editions, it has become a standard of authoritative information on the subject. This is the second English translation.

In its general scheme, the book gives the neurological anatomy of each part of the nervous system and then the physiological aspects, which are followed by a description of symptoms and abnormal reflexes occurring in disease of that region. There is no distinct description of any particular disease entity, but there are useful lists of possible ætiological factors in any one region. Two brief chapters are given to X-ray localization and one to electroencephalography. They are purely a broad-outline summary of the use of these methods in neurological localization. The question of the arterial supply of the brain stem and cerebrum is well covered. This is always a difficult subject, owing to their variability—a fact which the author concedes by considering their syndromes more in terms of brain region than in terms of specific vessel involvement. Little mention is made of blood supply in the general chapters when specific areas are being dealt with. Neurological

anatomy lends itself to clear-cut diagrams and illustrations. These are well used throughout the book in such chapters as "The Disturbances of Vision". The anatomical basis of many interesting neurological phenomena is discussed—for example, hypothalamic syndromes, cerebral shift, aneurysm and frontal ataxia.

This is a worthwhile book for any student of neurology.

Urology. By B. G. Clarke, M.S., M.D., F.A.C.S., and Louis R. M. Del Guercio, M.D.; 1956. New York, Toronto and London: The Blakiston Division of the McGraw-Hill Book Company, Incorporated. 9" × 6", pp. 255, with many illustrations. Price: $6.50.

"UROLOGY", by Clarke and Del Guercio, of Boston and New York respectively, is a somewhat unusual and ambitious undertaking, which has been attended by a very fair measure of success. To quote the preface, it provides a short essential text, makes free use of diagnostic X-ray films, photographs and photomicrographs, and provides a selected list of references to each disorder discussed in the text. It contains 235 pages, in the course of which the illustrations almost certainly occupy appreciably more space than the text.

The text in parts suffers somewhat from the degree of condensation which has been employed—a little over a page on history taking, for instance, 18 lines on physical examination and about a page and a half on laboratory diagnosis are not very adequate. On the other hand there are some sections, such as the treatment of prostatic obstruction (occupying less than two pages of text), which in the space occupied could hardly have been better handled. The illustrations in general are good, though some of the skiagrams leave a little to the imagination.

The book would form a most valuable addition to the library of the young man who, a few years after graduation, is commencing to study urology with a view to whole-time practice in that specialty. While he may not learn a great deal from the short essential text, the illustrations, as already mentioned, are in general good, the book is thoroughly up to date, and each short section of text is followed by a most comprehensive list of references to guide the student in his reading. If the book contained nothing else, it would be worth possessing for these alone.

Growing Up. By Karl de Schweinitz; Second Revised Australian Edition; 1957. Australia: Father and Son Welfare Movement of Australia. 7½" × 5", pp. 86, with 32 illustrations. Price not stated.

"GROWING UP" should prove a boon to parents with children. Its skilful presentation and excellent illustrations make it a delight to read. The book is essentially for the adolescent or young adult, but could be read with profit and interest by those adults who, even in these enlightened days, still know little of the anatomy and physiology of their own body.

This book could be read to, or better, could serve as a basis for talks to, the maturing child and young adult, or be given to them to read alone. The subject is approached in a direct, scientfic, yet wholly delicate manner, and the treatment conveys the correct sentiment and ideas regarding mating and the begetting of children as well as the necessary facts. This book should do much to lessen the ignorance and crudeness which, later in life, all too frequently cause distress and marital difficulties, and bring wives to the doctor's surgery in tears. "Growing Up" is to be highly recommended.

The Physiologic Basis of Gastrointestinal Therapy: Selected Topics. By Heinrich Necheles, M.D., Ph.D., F.A.C.P., and Martin M. Kirshen, M.D., F.A.C.P.; 1957. New York and London: Grune and Stratton. 8½" × 5½", pp. 336. Price: $8.75.

SELECTED TOPICS in the clinical physiology of the gastrointestinal tract form the basis of this book, whose authors have been for many years interested respectively in physiological investigations and clinical practice relating to alimentary diseases at the Michael Reese Hospital, Chicago. No one will deny that a modern account of this scope and size is desirable, but unhappily this effort is unsatisfactory.

The first chapter, on the relevant autonomic neurophysiology, sets the tone of the whole, in which clinical information of modern accent is allied to physiological concepts which have frequently been superseded. The chapters on absorption and excretion, the pancreas, and the liver and gall-bladder appear more satisfactory.

The title is not apt, for the information is not presented with treatment of the sick in mind, although the physiological basis of symptoms, excluding pain, is dealt with in some detail. Surgical therapy and subsequent changes in function are barely mentioned in any section. Though facts are adequately presented, there is little attempt at synthesis, and the reader is rarely instructed in the authors' interpretation.

The writing is not precise, so that possibilities which are theoretical surmises are not always distinguishable from those which are infrequent occurrences. The text frequently lapses into jargon; factual errors and inconsistencies, repeated spelling errors and an occasional dropped line do not invite the reader's confidence. The book cannot be recommended.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Physical Dynamics of Character Structure: Bodily Form and Movement in Analytic Therapy", by Alexander Lowen, M.D.; 1958. New York and London: Grune and Stratton. 8½" × 5½", pp. 368. Price not stated.

The author is Executive Director of the Institute for Bioenergetic Analysis, New York.

"The Medical World of the Eighteenth Century", by Lester S. King, M.D.; 1958. Chicago: The University of Chicago Press. 8½" × 5", pp. 368, with illustrations. Price: $5.75.

Deals with some of the intellectual, social, economic, moral and technical problems which beset the eighteenth-century medical man.

"The Year Book of the Ear, Nose and Throat and Maxillofacial Surgery (1957-1958 Year Book Series)." The Ear, Nose and Throat, edited by John R. Lindsay, M.D.; Maxillofacial Surgery, edited by Dean M. Lierle, M.D., and William C. Huffman, M.D.; 1958. Chicago: The Year Book Publishers. 7½" × 5", pp. 384, with 96 illustrations. Price: $7.50.

One of the Practical Medicine Series of Year Books.

"Applied Physiology of the Eye", by H. Willoughby Lyle, M.D., F.R.C.S., assisted by T. Keith Lyle, C.B.E., M.A., M.D., M.Chir., M.R.C.P., F.R.C.S.; 1958. London: Baillière, Tindall and Cox. 8½" × 5½", pp. 352, with 32 diagrams. Price: 45s. (English).

Written primarily for those working for higher examinations in ophthalmology.

"Science News 47", edited by Archie and Nan Clow; 1958. Mitcham, Victoria: Penguin Books Pty. Ltd. 7" × 4", pp. 142, with illustrations. Price: 4s.

Eight articles describe current developments in science for the intelligent reader.

"Intermediate Hosts of Schistosoma: African Biomphalaria and Bulinus", by G. Mandahl-Barth; 1958. Geneva: World Health Organization. 9½" × 6", pp. 132, with 60 illustrations. Price: 20s.

This is World Health Organization Monograph Series No. 37.

"Basic Cardiology", by T. E. Gumpert, M.B., Ch.B., F.R.C.P.; 1958. Bristol: John Wright and Sons, Limited. 8½" × 5½", pp. 176, with 72 illustrations. Price: 25s. (English).

Lectures given at the University of Sheffield, some to medical students, some to post-graduate students.

"Human Infertility", by C. Lee Buxton, M.D., Med.Sc.D., and Anna L. Southam, M.D., with a chapter on Endometrial Diagnosis by Earl T. Engle, Ph.D.; 1958. New York: A. Hoeber-Harper Book. 9" × 6", pp. 241, with 40 illustrations. Price: $7.50 (abroad).

The authors present their concept of human infertility, its prevention, implications, diagnosis and treatment, and the results of treatment.

Special Article.

VACCINATION AGAINST VIRUS INFLUENZA.

NEARLY every year there are one or two epidemics of virus influenza in Australia. They produce clinical infection in 5% to 20% of persons and are responsible for small but sharp peaks in over-all mortality rates during the epidemic.

Under favourable circumstances, vaccination will reduce the incidence of clinical influenza by about 80%; but it is necessary for the vaccine to match closely the antigenic pattern of the virus producing the epidemic.

Antigenic Variations of Influenza.

There are four known types of influenza virus, named A, B, C and D. Each type behaves as an epidemiologically distinct disease, and one type of virus does not mutate to another type.

Types A and B of influenza virus have been studied carefully over many years, and they are known to have very labile antigens. This fact may partly explain the frequent recurrence of influenza epidemics. For example, there has been a progressive change in the antigenic pattern of type A influenza virus over the years, and so far there has been no reversion to previously isolated forms. When a new strain of type A virus appears, it rapidly spreads, and the penultimate strain usually disappears.

The year-to-year change in antigenic pattern is generally small, but occasionally there is a major antigenic alteration. The two known major changes of type A virus were in 1945, when the so-called "A prime" virus was first isolated in Melbourne, and in 1957, when the "Asian" type A mutant was discovered by Dr. Chu in Peking. There may have been major changes before 1945, and it is widely believed that such an event was responsible for the tragic influenza pandemic in 1918.

There have recently been hints of a cyclic behaviour of type A influenza antigens, and evidence has been found that Asian type A virus may be closely related to the cause of an influenza epidemic in the 1890's. The span of such a cycle would approximate to our life expectancy of about seventy years. It may be that influenza antigens will revert to earlier forms only when these represent a new experience for virtually the whole living human population.

The Role of Vaccination.

Vaccination against virus influenza is of value in protecting individuals or populations against the new strains of virus which arise from year to year.

In most years the influenza antigen is not very different from the virus of the previous year. The human population will be largely immune to clinical infection, the clinical disease will be mild in most patients, and last year's vaccines will be very effective in preventing clinical disease in people who would otherwise be susceptible. Vaccination would be valuable in reducing morbidity in large groups of people, and might help to diminish influenza mortality in debilitated patients and in the aged.

If past experience can be used as a guide, a major change in antigenic pattern of type A influenza virus might be expected every ten or twenty years. It is believed that this sort of change produced the highly virulent epidemic of 1918, although the two recent major changes in the antigen of type A virus—in 1945 and 1957—were not associated with any abnormal increase in mortality. Where such a change in antigen occurs, the population will be largely susceptible to the new strain, and infection rates may be high. Because of this, and because of the possibility of a more severe clinical disease, vaccination will be urgently and universally required. But for the same basic reasons, vaccines of the previous year will be virtually useless; the urgent need will be for isolation and typing of the causal virus and the incorporation of the new strain in a new vaccine.

Influenza spreads quickly, and, even with some months of international warning, it is a huge task to produce and distribute a new vaccine in the millions of doses which would be required. Yet it is in just such a situation as this that influenza vaccine is of the greatest value.

The Production and Use of Influenza Vaccine.

Influenza virus vaccine is a killed suspension of influenza virus particles. The virus is grown in the allantoic sac of chick embryos, then concentrated by adsorption and elution, and finally treated with formalin to kill the virus. Because of the source of the virus, the vaccine also contains a small amount of egg protein.

Current supplies of vaccine contain viruses of the three types A, B and D. A recent strain of each type has been included, so that the antigenic stimulus of the vaccine will be as up to date as possible, but the inclusion of one early strain also helps to reinforce protection against current strains, and possibly against future mutants.

Recommended dosage is one millilitre given subcutaneously for adults, with smaller doses for older children. There is some reservation about its use in children under six years of age, although it is stated that some young children may be given the vaccine intradermally.

A vaccination course comprises two injections given at an interval of three or four weeks. The second or "booster" injection is particularly important for those individuals who have not previously experienced each type of influenza—for example, those who were not infected with Asian type A influenza in 1957. This course of two injections gives a much greater antigenic stimulus than the single dose of vaccine advised in 1957.

Reactions to vaccination are minimal. Most adults do not show any local or systemic reaction. A few adults develop a mild local reaction—perhaps an area of erythema or swelling several inches in diameter. Systemic reactions are even less common.

However, since the vaccine contains egg protein, particular care should be exercised where there is a history of allergy, especially when this allergy is to egg protein.

Summary.

When a major change in antigenic pattern of influenza virus occurs, there is an urgent and universal need for vaccination. The only satisfactory vaccine is one which includes the new strain of virus. The "Asian flu" epidemic of 1957 was an example of such a situation.

We cannot know whether there will be another type A influenza epidemic in Australia this year. Opinion is divided on this question. But when the next type A epidemic does occur, it is likely to be due to an Asian type virus, and no major antigen change in type A is expected for a number of years. In these circumstances, current vaccines should give almost 80% protection.

Because of the uncertain duration of vaccination immunity and the yearly minor variations in virus antigens, those who desire full protection should be given fresh vaccine each autumn.

S. G. ANDERSON.

Melbourne.

Medical Societies.

CHRISTIAN MEDICAL FELLOWSHIP OF AUSTRALIA.

THE Christian Medical Fellowship of Australia met in Hobart on the afternoon of March 3, 1958, on the occasion of the Tenth Session of the Australasian Medical Congress (B.M.A.). The meeting was held at Bishopscourt by courtesy of the Bishop of Tasmania, who was present. The chairman was DR. J. GAVIN JOHNSON (Victoria).

The meeting took the form of a discussion on the subject "Possibilities and Problems of Improved Cooperation between Doctors and Clergy". The principal speakers were DR. BRUCE PETERSON (New South Wales) and the REVEREND GODFREY KIRCHER, Precentor of St. Paul's Cathedral, Melbourne.

Dr. Peterson said that although for many decades individual clergymen, priests and doctors had cooperated on a friendly basis in helping the sick in body and soul, in recent years there had been renewed interest and activity in such cooperation. For that a number of reasons were suggested: the growth of teamwork in all spheres in medicine; the fact that chaplains and doctors had worked together in the armed services in two world wars of the present century; the increasing health-consciousness of the general public, including clergymen; a reawakening of interest in spiritual or divine healing; the advent of training in pastoral psychology in theological colleges, enabling clergy to recognize early mental illness. It was important to study the related possibilities and problems in order to safeguard the best interests of patients and the finest

traditions of medical practice. It must be recognized that some doctors were critical of clergy and their real or imagined interference in the care of the patient. There were still some clergy who insisted that healing should be the province of the Church; others felt deeply about the indifference to religion of some doctors; yet others said that doctors were too busy or too inept to be bothered with their patients' emotional or spiritual problems.

Dr. Peterson went on to say that doctors who felt that they should cooperate on every possible occasion with clergy advanced the following as their reasons.

1. If the doctor was a good listener, many patients would unburden themselves of emotional and spiritual problems. If the patient wished it, the latter problems might warrant referral to a clergyman.

2. Many folk with emotional and spiritual problems went first to the clergyman. Some of the problems had medical aspects—for example, irritability might be due to ill health, in which case the clergyman should refer the patient to a doctor.

3. The role of faith, spiritual comfort and a purposeful philosophy of life in helping patients cope with anxiety, resentment and guilt could not be ignored. Those feelings and attitudes were important in all illnesses, especially in those classed as psychosomatic and in the neuroses.

4. In all sickness one must bear in mind "the whole man", a psychosomatic unity of body, mind and spirit, in his total environment. There was an overlap in the work of clergyman and doctor, especially in the psychological sphere. Both clergyman and doctor tried to help "the whole man", as counsellor and friend, and in interviews both used the techniques of skilled listening and talking. In the broader sense, religion needed the insights of physiology, psychology and clinical medicine; and the practice of medicine was incomplete and inadequate if moral and spiritual factors were ignored.

5. Some patients asked to see a clergyman; or a clergyman might seek permission to visit a patient. There were occasional contraindications, but they were very few.

6. Support for cooperation between clergy and doctors came from statements issued by the Council of the British Medical Association in England in 1947 and 1954.

Dr. Peterson said that he would like to list at least nine ways in which clergy and doctors could work together in the task of healing the sick and preventing illness. He was well aware that there were many difficulties, and some of them would be mentioned. The following were the nine ways.

1. Referral, as already indicated. Both clergyman and doctor were specialists in their own fields, and there was a need for each to respect the other's role. The doctor could not act as priest, and must never attempt to indoctrinate a patient with his own religious convictions. The clergyman could not dabble in being an amateur doctor. For referral to work harmoniously and with benefit to the patient, it was best for the doctor and the clergyman to know each other personally and to understand and trust each other. Otherwise problems of misunderstanding and differences of approach all too easily arose. Often doctor and clergyman could work concurrently with a patient. The clergyman might assist with counselling and the various resources of the Church's ministry of healing, such as prayer, both individual and corporate. Difficulties might arise if a clergyman and psychiatrist tried to work concurrently, because of shortage of time to compare notes, and because of transference problems. It could be done in a few instances, but mostly Dr. Peterson had found it best to complete psychotherapy first and then refer the patient to a clergyman if indicated.

2. Teaching. To learn of each other's terminology and functions, and thus to make effective communication possible, clergy and doctors needed undergraduate teaching about their respective roles. The Royal Melbourne Hospital had led the way in such teaching.

3. Chaplaincies. There was a need in large general and mental hospitals for full-time, specially trained chaplains. Part-time visiting chaplains could not cope with the need. In that also, Victoria had led the way in appointing full-time chaplains to some hospitals.

4. Overseas missions. Doctors could cooperate by offering as medical missionaries.

5. Committees. Clergy and doctors could work together by making available their knowledge on committees responsible for community projects—for example, schools and churches. That could play a major role in preventive medicine and mental hygiene.

6. Spiritual healing. There was a great need for further research in spiritual healing, as indicated in the British Medical Association's pamphlet "Divine Healing and Co-operation between Doctors and Clergy". But many doctors believed that when patients, relatives and doctors prayed for the Creator's guidance and help in the everyday work of medical practice and of the Church's ministry of healing, He did respond. The divine response was rarely nowadays what one would call a miracle, and it was never magical, but it was always a response of love which extended beyond the merely temporal.

7. Marriage guidance centres. Many marriage guidance centres had clergy on their staff as counsellors, who might refer certain patients to a medical consultant panel. In addition, many doctors found opportunities in their private practice to work with clergy on marital problems.

8. Mental illness. The Church could play a major role in helping the mentally ill, not only by providing for their spiritual needs while in hospital, but also by supplying a therapeutic *milieu* of understanding and love during convalescence.

9. Clergy-doctor groups. Small groups of clergy and doctors could meet for discussion, planning and prayer. They could focus on individual patients who presented problems of management, and on opening up new ways of cooperation. Several such groups already existed in Australia, Great Britain and the United States, and useful work could be done, provided certain dangers were avoided—namely, long arguments over theological or sectarian issues, misunderstandings due to unfamiliarity with each other's terminology and aims, and the termination of discussions by merely saying nice things about each other.

In conclusion, Dr. Peterson said that the outline he had given was of necessity incomplete and tentative. His hope was that it would stimulate further thought, work and research based on both faith and reason. In the last analysis, doctors who believed in the Christian way of life would want to cooperate with clergy, because both professions were trying to cooperate with the Creator in the great work of healing the sick bodies and souls of mankind.

The Reverend Godfrey Kircher said that the terms of reference given to him were: "Possibilities and Problems of Cooperation between Doctors and Clergy." His listeners naturally expected him to present the point of view of "the clergy". But not even His Holiness the Pope could do that. They must take his paper as the view just of a clergyman. He would do his best to supply ammunition for discussion; he would not apologize for being "theological"; and he would approach the subject in a slightly different order from that suggested in the title.

First, he would not assume universal agreement on the desirability of cooperation. Secondly, he would introduce a brief theological *divertissement*, to describe how the parson regarded the person upon whom the doctor practised his healing art. Thirdly, he would attempt to indicate what the (more or less) ideal parson believed was his contribution to the healing of the sick. Fourthly, they should then be able to assess some of the possibilities of cooperation, and, fifthly, some of the problems. Sixthly—but there he would exceed his terms of reference; "The Needs of the Clergy for Effective Cooperation" might form the title of a further paper.

On the question of the desirability of cooperation, Mr. Kircher said that no one, of course, had ever made the fantastic claim that doctor-parson cooperation was desirable in every case the doctor handled. But the knowledgeable parson often felt (*a*) that his pastoral ministry to a parishioner would be much more effective were he able with ease and confidence to refer to a medical man, and (*b*) that he could provide in sickness a healing potential which reached maximum effectiveness when coordinated intelligently with the medical treatment. Therefore he desired the possibility of cooperation, medico-*cum*-parson.

In theory that had been freely conceded by the highest authorities in both professions. On the medical side, for example, it had been expressed in the statement "Medicine and the Church" approved by the Council of the British Medical Association,[1] a statement which was adopted by the Victorian Branch of the British Medical Association on June 30, 1953. It spoke of "a field for legitimate and valuable co-operation between clergy and doctors" . . . "no ethical reason to prevent" . . . "often necessary and desirable" . . . "Medicine and the Church working together . . .". More recently that attitude had been reiterated in greater

[1] *Brit. M. J.*, 1947, 2: 112 (November 8).

detail in the report published by the British Medical Association in 1956 under the title "Divine Healing and Co-operation between Doctors and Clergy". The review of and editorial comment on that report in the *British Medical Journal* of May 12, 1956 (page 1094) and Supplement (page 269) commended the report's positive recommendations. Perusal of those documents was of perennial value. On the Church side, principles of cooperation had been most clearly expressed in the statement printed as Appendix III in "Divine Healing and Co-operation between Doctors and Clergy" (page 46). An appraisal of the Council's might be found in *The Lancet* of November, 1948. Successive Lambeth conference reports had both formulated and moulded the thought of the Church on the subject. The 1908 report committed the Church to the primacy of "scientific medical study" and "qualified medical practitioners" in any ministry to the sick. The 1920 report, in a section on Christian science, said, among other things (page 125): "We feel that it is important that candidates for Holy Orders should be equipped by training in psychology, and be given some acquaintance with methods and principles of (medical, scientific) healing." The 1930 report, in a section on "Spiritual Healing" (page 182), expressed clearly and logically the relation of spiritual ministry to medical treatment; and in Resolution 73 (page 61) it said: "There is urgent need for co-operation between clergy and doctors since spiritual and physical treatment are complementary and equally necessary for true well-being"; and ". . . it is of the utmost importance that the clergy should equip themselves for a fuller understanding of the intimate connexion between moral and spiritual disorders and mental and physical ills". It would seem that in theory the desirability of cooperation was agreed.

In practice, however, even after many years of waiting, it was the rare exception rather than the rule. The rank and file, of both doctors and clergy, it would seem, still needed to learn each other's respective roles, and still waited to work out the methods and techniques of effective working together.

Three factors continued to press the urgency of practical cooperation: (*a*) recognition of a patient's "total need"; (*b*) the constant overlapping of roles; (*c*) appreciation of the intimate connexion of the moral, spiritual, mental and physical in man. (*a*) It was not sufficient to recognize the fact that no one man could satisfy the total needs of a man, sick or whole; that physician could not also be a priest, and vice versa. In the interests of human personality it was necessary to recognize the need of coordination and integration. (*b*) The good doctor could not but be concerned for his patient's moral and spiritual welfare; the faithful pastor must be interested in his parishioner's mental and physical well-being. Lack of cooperation must mean frustration on all sides. (*c*) While "we must beware of the danger of equating sin and disease as parallel disorders of life", many a case history revealed to the discerning eye an intimate connexion between sin and disease.

Turning to his theological *divertissement*, Mr. Kircher said that it might be useful to clarify the theological assumptions behind the relevant insights. For the parson, at least, they oriented his approach to the sick. He would mention five: human personality, human nature, God's creativity, God's purpose, sickness.

The first related to human personality and its unity. The sick parishioner was a body (organic mechanism), a mind (emotional, impulsive, calculating, purposive, idealistic), a spirit (moralistic, artistic, religious), and a social cell (meaningless apart from his surrounding groups). Although conditioned by the physical, he was capable of an astonishing degree of sublimation. Whatever his physical, mental or spiritual condition, he was in himself a person of infinite value, to be respected and loved.

Secondly, human nature, as the Creator ordered it, possessed astonishing resilience, resource and reserves. Physically, psychologically and spiritually that fact had been well demonstrated. Justice to man as well as to his Creator demanded that a sick person be given every chance and encouragement to draw to the full on all the latent powers of Nature and of grace that were available to him.

Thirdly, God's creativity, according to Christ's teaching (John v : 17 (Knox version): "My Father has never ceased working. . . ."), was a continuous activity, creating, re-creating, ordering, directing and intervening at crucial moments in the lives both of individuals and of the human race. By providence (where man accepted), by judgement (where man rejected), God worked His will ("Providence and Judgment", E. H. Burgmann, 1941). Once the clue was suggested the pattern became plain. They saw it in the lives of their patients and, if they would, in their own lives, too. The priest/pastor knew himself to be an agent of God's creative activity, and he regarded the doctor as an agent also.

Fourthly, God's purpose for man, the reason for which he had been created, the goal towards which all his energies should be bent, was salvation—a theological word which might be rendered "total health, complete well-being, both temporal and eternal". It was found superlatively as a person's life was lifted consciously into union with God as Jesus has revealed Him. Within such a four-dimensional perspective the parson regarded the incident of sickness. He was concerned not only that Mr. Jones should have the maximum well-being there and then, but that it should contribute to his full and lasting salvation. (Cf. the catechism formulæ: "Man's chief end is to glorify God, and to enjoy him for ever", and "God made me to know him, love him, and serve him in this world, and to be happy with him for ever in the next".)

Fifthly, sickness, whether congenital, environmental or degenerative, was, as the parson saw it, a complex condition involving the whole personality; it was not merely Mr. Jones's stomach which was sick, but Mr. Jones himself who was sick. Often it called for a great variety of community resources of healing, many non-medical and many "spiritual"—in other words, concerned with the spirit of the person. The pastor, as the epitome and exponent of the spiritual therapies of the community, accepted his proper responsibility in the care of the sick, in the name of God, in the name of Christ, in the name of humanity.

For further consideration of the theological issues Mr. Kircher recommended Chapter 1, "The Theology of the Chaplain's Ministry", in "A Priest's Work in Hospital", by J. G. Cox (S.P.C.K., 1955), and its bibliography; also the section on "Visitation of the Sick" in "Liturgy and Worship", by Lowther Clark (S.P.C.K., 1933). Many of the relevant theological problems were considered *inter alia* in Mascall's book "Christian Theology and Natural Science" and "A Definition of Working Principles" was given in his own book "An Experiment in Medicine-Church Relations".

On the subject of the parson's contribution in sickness, Mr. Kircher said that the pastor, whether he was parish minister or chaplain in a hospital, had at his disposal a wide range of spiritual ministrations ready to be applied specifically according to the needs of the sick person. Time permitted him only to summarize very briefly under four categories: dynamic, word, sacrament and pastoral care.

The first was spiritual dynamic. Napoleon had said, "In war, the moral as to the material is as three to one", and probably the doctor would say much the same. The spiritual buoyancy, or lack of it, in the patient and in those around him might be thought a factor of some importance. The pastor had the task and the means of stimulating faith, hope and love, using those theological words in their full significance. No doctor who had studied, for example, Franz Alexander's "Psychosomatic Medicine" could discount the ideational component in a patient's illness. The pastor who had the ability to untie the tangle of conflicting motives, distorted objectives, self-loving, self-pitying constellations, guilt (imaginary or real) and grief complexes, soul hunger and starvation, and infuse in their place the healing virtues of conviction, confidence and charity must be accounted an ally. "Motivation" might be a preferable word.

The second category was the ministry of the word. Words were weapons. The incarnate God was called The Word. The ministry of the word could mean instruction, filling spiritual and intellective voids—the appropriate application and use of the truths and message of Holy Scripture. The word of prayer signified not only the sublimation and orientation of inner attitudes of the praying persons, but relaxation, receptiveness, a drawing on inner resources, lifting of sickness and its struggles on to a higher level of life, incorporation into a fellowship in which faith, hope and love found active expression. The counselling word, from the mouth of the trained pastor, was a "minor psychotherapy" for individual or group, as the situation might indicate, promoting personality, spiritual and social adjustments, resolution of conflicts, often removing the immediate reason for an illness, clearing the way for successful physical therapy or assisting rehabilitation. In short, the ministrations of the word might correct (with spiritual antiseptics), augment (with spiritual vitamins), fortify (with spiritual digitalis) or salve (with spiritual antibiotics), as the need might be.

Thirdly, sacraments were symbolic ministrations (in theology, "effective signs"), carrying the pledge of divine grace, vehicles of God's creative and re-creative activity. Various examples might be given: the sacrament of forgive-

ness, of release and renewal; the symbolic meal of a holy fellowship; the specific rites for the sick, the laying on of hands with prayer, in which all the healing hands of physician, surgeon, nurse and therapist were symbolically represented—Christ's healing hands; the anointing with oil, in which all the *materia medica* were, as it were, consecrated. To the spiritually sensitized, those predisposed with humility and penitence, faith and charity, those were indeed powerful therapies working through the highest levels of human personality. Conceivably a Christian doctor would be interested to know or to see that his patient had every possible help that every allied profession could provide.

Fourthly, pastoral care, on the level of practical human need relevant to the crisis of sickness, an extension of the specialized role of social worker and almoner, must be an invaluable aid to the doctor where it was present (to say nothing of its significance to the sick person and his family) and a serious loss where it was absent. Conceivably there were cases in which the pastor's intimate knowledge of family history and domestic conditions might be of some value to the doctor in assessing the psychosomatic factors in an illness. The parson often felt that, with a little fraternal guidance, consultation on a professional basis and coordination, the effectiveness of his pastoral care could be immeasurably heightened, and many a mistake be avoided.

Behind those four brief descriptions of the parson's contribution—dynamic, ministries of the word, and of sacrament, and pastoral care—lay a wealth of detailed, skilled techniques wholly oriented towards health and total well-being, but often falling short of maximum effectiveness. Two conclusions must be clear: (i) that the doctor, however spiritual he might be himself, could not take the place of the priest/pastor; (ii) that frequently cooperation between doctor and parson would be to the advantage of both, and of greatest advantage to the patient.

Dealing next with possibilities of cooperation, Mr. Kircher said that those, however desirable, would seem to be limited. Before going on to consider them in detail, it would be seen that they fell into two categories: (*a*) cooperation in the hospital setting; (*b*) cooperation in the practice/parish setting.

In the hospital cooperation should be easier: (i) the idea of teamwork was established; (ii) the fact of medical control was undisputed; (iii) the parson was usually an accredited and accepted chaplain, experienced in dealing with the sick, knowledgeable of medical and hospital procedures, and sensitive to their delicate nuances; (iv) when it happened, as it did increasingly in Victoria, that the chaplain was specially trained to a recognized and exacting standard, then the possibility of cooperation became high. One could instance the Royal Melbourne Hospital (among others) or the hospitals of the Mental Hygiene Authority, where the chaplaincy was recognized as a "department" of the hospital, receiving with other departments internal bulletins and communications; where chaplains were included in conferences and relevant clinics; where referral and consultation were easy and frequent. There had been every indication that the medical profession was finding this interprofessional cooperation satisfactory and valuable. It was found, too, that the chaplain became an easy intermediary in promoting consultation between doctor and outside clergymen. All that became part of a build-up of increasingly cordial "public relations" between church and medicine.

In the private practice-parish setting, cooperation, for obvious reasons, was not so easy either to establish or to assess. It depended on individual and private approach. No doubt many doctors and many parsons could adduce instances of fruitful cooperation, but they did not lend themselves to statistical calculation. Surely, however, that was the field where cooperation was most needed, and could be of greatest value, in the incipient stages of physical or mental illness. For that reason Mr. Kircher suggested the starting point of cooperation and four indispensable conditions. The starting point was "patient welfare", the recognition that in the interests of the patient the pastor should have a yarn with the doctor, or the doctor should pass the word to the parson. The first condition of mutual conversations was the mutual recognition of ethical integrity. The doctor, for example, needed to feel sure that his professional confidence would not be displaced, that his own ethical code was understood and appreciated, and that the parson would be strictly ethical in his handling of the situation. The second condition was a mutual understanding of the respective roles of doctor (whether physician or psychiatrist) and of parson, with a strict adherence to the proper role; for example, if the doctor suspected that the parson subtly discounted his scientific-medical treatment, cooperation was pretty well ruled out *ab initio*, and vice versa. The possibility of cooperation would seem to depend on a degree of scientific understanding and a measure of spirituality in both doctor and parson. The third condition was the ability to communicate. The parson must be able to understand the doctor, and vice versa; for example, if the parson was ignorant of the elementary facts of anatomy and physiology, of pathology and psychology, the doctor must feel the gulf to be like that between Dives and Lazarus. As for the doctor—as Sir Albert Coates had said in 1957 at the University of Melbourne—the old-time doctor based his medicine on a knowledge of philosophy and theology; the new-time doctor seemed to lack that advantage. Nevertheless, Mr. Kircher would not deny that the language used by new-time parsons was sometimes somewhat obscure. The fourth condition, both doctors and parsons being but human, was a certain personal compatibility. Mutual respect, both cultural and personal, would seem to be a *sine qua non*. If those present imagined any pair of doctor and parson of their acquaintance, they would admit that compatibility did not usually flower spontaneously. Doctors were often scared of parsons—for a variety of reasons. Parsons were often shy of doctors—for a variety of reasons. So it was difficult for either to take the first step. But in the interest of patient welfare cooperation was desirable, and the cordial association of the two professions was surely to be encouraged. Therefore, the Christian doctor who was ready to take the initiative in appropriate circumstances would do a great service to the cause, and was likely to be pleasantly rewarded.

Coming to the final aspect of the subject, that of problems, Mr. Kircher said that it might well be thought that all the problems implicit in the foregoing discussion were all that could be desired, and were sufficiently formidable. Only with reluctance did he suggest three more: the problems of (i) primacy, (ii) moralism and (iii) theological obscurantism or extravagance. They were religious rather than medical problems.

The problem of primacy might be illustrated by the question of which was the more important—the patient's temporal welfare or his eternal welfare. If it seemed that a simple answer was sufficient, then one applied it to the situation: Should a dying patient be told? Most parsons would probably answer both questions very simply, and feel a certain resentment against a profession which, for reasons not quite clear to the clergy, answered them in the opposite way. Rightly or wrongly, the parson felt that the values he stood for were treated cavalierly. The clergy needed to be educated to the doctor's problems; but the vague feeling of antagonism, real or imaginary, on the level of values, was a fruitful deterrent to cooperation.

By "moralism", Mr. Kircher said that he meant the general habit of the clergy, understandable enough, to moralize sickness. He had known a woman suffering from septicæmia, following a stillbirth, to be told that God was punishing her for having married out of her church. The doctor just could not be moralistic in his medical practice. The average parson found it almost impossible not to be judgemental. No wonder physician and psychiatrist looked at him askance! Some parsons had found their way through the problem (for example, Gordon Powell, who had recently published his little book on "acceptance" with the title "The Secret of Serenity"), but for many parsons it remained an unrecognized bar to cooperation.

Thirdly, theological attitudes did make a difference. For example, Oral Roberts's theology would make it rather difficult for him to cooperate fruitfully with a doctor; or conversely, the theology which declared to a desperately sick person: "Dearly beloved . . . whatsoever your sickness is, know you certainly that it is God's visitation . . . take therefore in good part the chastisement of the Lord", etc. Uncertainty as to the theological respectability of the heterogeneous collection of clergymen a doctor might have in his locality might well daunt his desire to promote cooperation.

In conclusion, Mr. Kircher said that he would like to make a short *credo*. He believed in cooperation; he believed it could be found; and he believed, he knew, that when it did happen there was a wonderful outpouring of the re-creative spirit of God. He believed, too, that where a body of consecrated men were earnestly seeking greater cooperation, it would come, to enrich both professions, to bring great blessing to the people they served, and to bring greater glory to God.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

ORIGIN OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.[1]

[From the *Australasian Medical Gazette*, November, 1881.]

DURING the latter half of the year 1879 the progress of the British Medical Association had been noted and applauded by a few of the Sydney practitioners. The want of a medical society where questions of ethics and other matters relating to the well being of the profession might be discussed, had been for some time felt. The Australian Medical Association of Sydney had broken up in 1869. The medical section of the Royal Society had been constituted in 1876, and its meetings were alone devoted to the reading of papers, letters, and reports on medicine and surgery with their branch sciences and reports consequent thereon. A Society which should have for its object the maintenance of the honour and interest of the profession, as well as the promotion of medical and allied sciences, was felt to be required. Towards the end of 1879 several practitioners were desirous of forming a Branch of the British Medical Association in New South Wales, and on the evening of February 9 1880 a meeting took place at Dr. Milford's residence for that purpose. There were present Drs. T. B. Belgrave, Craig Dixson, G. K. MacKellar, A. Moffitt, A. Renwick, W. E. Warren, R. D. Ward, and F. Milford. The following resolutions were passed: "That it is desirable that a Branch of the British Medical Association be formed in New South Wales, and that this meeting hereby pledges itself to use every effort to assist in forming such Branch, and to advance its interests and the interests of the British Medical Association" and "That Drs. Renwick and Milford be appointed a Committee for the purpose of drawing up by-laws for the Branch".

The by-laws were adopted by a meeting of sixty practitioners convened by advertisement and circular on 16th February 1880.

On March 1st 1880 the following Councillors were elected: Drs. Renwick, Moffitt, Fortescue, Schuette, MacKellar, Wright, MacLauren, Marshall, O'Reilly, and Milford. From these Dr. Renwick was elected President, Dr. Moffitt Vice-President, Dr. Wright Treasurer, and Dr. Milford Secretary. The first meeting of the Council took place at the Secretary's residence on the evening of March 22nd when some business was transacted, and the next general meeting fixed. During the year 1880 there were held nine council and eleven general meetings. Twenty papers were read and discussed at the general meetings and many points having reference to the welfare of the profession and the Branch were considered.

It was not until 7th July that the Branch was formally recognized by the Council of the British Medical Association, and intelligence that it was so recognized was not received here until early in December. This general and kindly communication was passed at a meeting of the Committee of Council, and was couched in the following words: "Read communication from Dr. Milford of Sydney, of May 18th 1880, relative to the formation of a Branch in that city for the colony, whereupon it was resolved that the Branch be and it is hereby recognized and the by-laws approved."

[1] From the original in the Mitchell Library, Sydney.

Correspondence.

STAFFING OF BASE HOSPITALS.

SIR: In replying to Dr. A. M. Macintosh's letter in THE MEDICAL JOURNAL OF AUSTRALIA of May 31 last I hasten to say that some difficulty was experienced in my previous correspondence in condensing all the ramifications of classification, as it exists in Orange at the present time, into a few paragraphs. It was not my intention to, nor did I in actual fact, cast aspersions on those with higher qualifications. On this subject it is sufficient to say that the aspirants have first to obtain the requisite experience and then pass the scrutiny of some of the ablest teachers in the Commonwealth. The general practitioner who, in times of stress, has not had blessed recourse to the aid of the specialist must be a very rare entity indeed.

As far as the majority of general practitioners are concerned, I feel sure that the patient's welfare does come first. It is agreed that major operative procedures are best left to those with the experience or qualifications to handle them. On the other hand, from my "own side", as Dr. Macintosh puts it, the management of an acute appendicitis or Colles's fracture which comes to the surgery and requires public hospital treatment is informative. Such a case is admitted under, or treated in the out-patient department by, one of the honorary surgeons. The "surgeon" may or may not be the possessor of higher surgical qualifications, and in any case is engaged in general practice in the town. How such an arrangement redounds to anyone's benefit is difficult to see, as: (*a*) The patient's choice of medical attendant is limited and he may be subjected to an extenuated wait while the transfer is effected. He could hardly be blamed from falsely inferring that (i) the referring practitioner does not do any work without financial gain or (ii) he is very ill versed in elementary surgical or orthopædic skills. (*b*) The honorary "surgeon" will have to take time off from his own practice to see the patient and arrange an anæsthetic, etc. (*c*) The referring practitioner will sit at home in a considerable state of frustration.

My knowledge of "the new outer metropolitan hospitals" is nil, but the ready availability of most specialist services, the probable presence of a numerically adequate resident medical staff and the greater population would appear to present a different problem. It is realized that an increasing number of people with higher qualifications are gradually coming to country areas. Rather than have the average general practitioner relegated to pre-resident status as far as some facilities in a base hospital are concerned, a compromise solution seems to be in order. It is to be hoped that a recent resolution put forward by the Western Medical Association towards this end will receive sympathetic appraisal by Council.

Yours, etc.,

J. G. GLASSON.

118 Edward Street,
Orange,
New South Wales.

June 4, 1958.

CHLORPROMAZINE JAUNDICE.

SIR: Whilst agreeing with Dr. R. E. G. McLean (M. J. AUSTRALIA, May 24, 1958) that added interest may have come from the discussion of promazine ("Sparine") as an alternative to chlorpromazine therapy in the case of jaundice reported by Professor Trethowan and Dr. Shand, it is pertinent to observe that, concurrently in June, 1957, a patient at the Neuropsychiatric Clinic of Ann Arbor, Michigan, receiving 1000 milligrammes daily of "Sparine", developed jaundice and agranulocytosis with a white cell count as low as 550.[1] The Sydney patient receiving 800 milligrammes daily of chlorpromazine would probably have required a larger dose of promazine than that given to the Michigan case. Recently the occurrence of *grand mal* attacks have been reported with daily promazine doses of 1200 to 1600 milligrammes.[2] Until the weight of evidence conclusively proves otherwise, it would be safer to regard both promazine and chlorpromazine as similar in their capacity to produce complications.

Yours, etc.,

DOUGLAS VANN.

Macquarie Chambers,
Cooma,
New South Wales.

May 28, 1958.

CANCER OF THE UTERUS.

SIR: Your very sound leading article in this week's Journal reiterates what one has said so often, and stated at length in the presidential address at the Australasian Medical Congress in Hobart. You have drawn attention to the Papanicolaou smear and its far-reaching possibilities. I should like to repeat what you said, that is, "the real impor-

[1] Reinhart, M. J., *et alii* (1957), *Am. J. Psychiat.*, 114: 462.
[2] McLean, D. D., *et alii* (1958), *Am. J. Psychiat.*, 114: 934.

tance of the vaginal smear technique is the detection of carcinoma-in-situ". With this I whole-heartedly agree, and I feel that this method may often establish the diagnosis of carcinoma in a woman who would not have a biopsy done. The method is comparatively simple and can be learned fairly easily, I myself having done over two thousand smears. The cyto-analyser to which you refer is a further advance which could be of tremendous value in narrowing down the important and suspected smears. The use of the colposcope has given, I have found, great assistance in the early diagnosis of carcinoma of the cervix. If investigation centres or clinics could be developed away from cancer units or general hospitals, a small team could do all the investigations simply and narrow down those who require a ring biopsy to be taken. I have suggested such centres on many occasions and feel that your extremely well-set-out statement will be of tremendous help. The article by A. McQueen Thomson is an additional help, and it is hoped that one day the inertia regarding the investigation of uterine cancer will give way to activity, involving the taking of smears and the investigation per colposcope.

Yours, etc.,

63 Palmer Place,
North Adelaide,
June 2, 1958.

R. FRANCIS MATTERS.

EXFOLIATIVE CYTOLOGY.

SIR: Since my article on the value of exfoliative cytology in the detection of cancer[1] nearly four years ago, little has been written on this subject in Australia. The paper by Dr. McQueen Thomson and your editorial[2] again draw attention to the value of this test. Hospitals and private gynæcologists in Hobart have been using this slide technique for over three years now and several cases of unsuspected carcinoma-in-situ of the cervix have been diagnosed by biopsy following cytology. In future it is planned to offer cytology to all practitioners in Tasmania free of charge and a full-time technician is being trained to stain and screen the slides. In this way, each practitioner will be his own "Cancer Detection Clinic". It is realized that results will not be spectacular and the cost for each new case of cervical (or lung) cancer diagnosed will be considerable, but *does this matter?*

In conclusion, I would like to make the following observations:

1. An assistant can be given a reasonable training in less than six months (the course at the University of California is three months). The most valuable aid in training is a large collection of positive and negative slides, and these cannot be collected in a short time here.

2. A satisfactory mechanical cyto-analyser would be of immense help and some day this may cut down the numbers of slides to be examined. For many years, however, we in Australia will have to depend on trained technicians for our initial screening.

3. In his Appendix II, Dr. McQueen advises mailing slides in the fixing solution, but postal regulation 249 (vii) expressly forbids mailing of inflammable materials. If a slide has been fixed overnight it can be mailed dry. Such a slide does lose some staining detail, but is usually satisfactory for diagnosis. Slides for mailing may be coated with glycerin or a resin such as "Diaphane".[3]

Yours, etc.,

Royal Hobart Hospital,
Hobart,
Undated.

CAMPBELL DUNCAN.

PRURITUS ANI.

SIR: Dr. Edward Wilson's notes on "Pruritus Ani: A Prosaic Problem" (M. J. AUSTRALIA, April 26, 1958) have greatly interested and yet piqued me, a forty-year sufferer. "Prosaic" denotes dull and tedious—but this exquisite malady is never the former. Between long periods of burning, pricking, glow and tingling, there may be delicious days or weeks of kindly itch, where a touch or a tiny "scratch" eases the little torment that still reminds of suffering yesterday. Nor is the visiting from practitioner to practitioner and from specialist to specialist dull—in those like me in whom no cause is discovered. There is ever present the dream that the new recipe, avidly applied, will bring relief.

As a medical student I eagerly frequented the houses of dermatologists and physicians in Macquarie Street and there was prescribed for with a frankness that drove from my heart the young and magic mystery of medicine. For my advisers would read the text-books with me and between us we would pick a seeming-good prescription. And so, with the years, the pruritus continued on its own way and my patients derived some ever temporary benefit from my own sufferings and from the ointment and lotion sections of the various hospital pharmacopœias and the dermatology books. Finally, I became convinced I was one of the great living experts on pruritus therapy. That was till I met my first case of pruritus vulvæ in my then country practice. The red, swollen and irritable vulva appalled me, but I assured the lady she was being advised by a specialist—and the cocaine and its congeners, the carbolic and the calamine, the hygiene, the rest and all the sedatives drove my patient to a dermatologist in Brisbane, and lo! to my surprise and chagrin (?), she was back in her country home in two weeks bright and cured, except, of course, for the little itch that is the pleasant reminder. The specialist was kind enough to let me have his secret: 3% silver nitrate dissolved in nitrous spirits of ether—which I soon got going onto myself. Oh! the piquant agony of the application; the fiery apnœic, psyche-consuming, nerve-tingling half-minute. Then the glow! and then the ease! Paradise for days! With ensuing applications, ease for months; then forever—but ever with the remnant occasional prod to recall the intense rawness of other days.

So my patients and I developed a technique—and they were keen to use the doctor's personal treatment—the "silver ease". Wash with cotton wool and soft soap and water after defæcation. Clean underwear daily. Bath twice daily. No greases or lotions. Apply the nitrate solution with a soft brush—liberally—with the nates well spread. There is time for this swift liberal application before the silver burn arrests all activities. Finish off by applying a layer of witch-hazel vanishing cream—which seems to smooth off skin roughnesses and at least has a delicious cooling sensation. No more silver is applied till the pruritus again drives you to it.

Any man who treats himself has a fool for a doctor—and if so, in this case we can agree with Pope:

> You think me cruel? Take it for a rule,
> No creature smarts so little as a fool.

Or with Ausonius:

> Mules may ease each other's itch.

Dr. Wilson, and you, sir, will, I trust, detect no hint in all this that pruritus ani may be associated with "pruritus disputandi".

Yours, etc.,

June 2, 1958. H.O.T.

Obituary.

SIR GEORGE WILSON.

WE are indebted to Dr. Roland Beard for the following appreciation of the late Sir George Wilson.

Sir Thomas George Wilson, obstetrician and gynæcologist in Adelaide for many years, died there on March 14, 1958, at the age of 82 years.

He was the son of the late Charles Graham Wilson, of Armidale, New South Wales. Educated at New England Grammar School, Armidale, and at St. Paul's College, University of Sydney, he graduated M.B., Ch.M. in 1899, and obtained his F.R.C.S. at Edinburgh in 1901 and his M.D. in 1904. He was a Foundation Fellow of the Royal Australasian College of Surgeons; Foundation Fellow of the Royal College of Obstetricians and Gynæcologists; Fellow of the American College of Surgeons; Honorary Gynæcologist, Royal Adelaide Hospital, from 1902 to 1928; Honorary Obstetrician, Queen Victoria Maternity Hospital, from 1903 to 1941; and Edward Willis Way Lecturer in Gynæcology

[1] M. J. AUSTRALIA, 1954, 2: 628 (October 16).
[2] M. J. AUSTRALIA, 1958, 1: 699 and 711 (May 24).
[3] *J.A.M.A.*, 1957, 164: 1330.

and Director of Obstetrics and Gynæcology, University of Adelaide, from 1924 to 1941. He was president of the South Australian Branch of the British Medical Association in 1922. In the Australian Army Medical Corps he served with the First Australian Imperial Force in Egypt and Lemnos in the Gallipoli campaign and in France, and was at one time in command of a hospital ship. His professional activities were numerous and varied. Besides his intimate association with the teaching of obstetrics and gynæcology to the graduates of the University of Adelaide during those years, he was deeply interested in the teaching of nurses and one of the founders of the South Australian Branch of the Nurses' Association, and in turn its president and patron. In 1910 he inaugurated an ante-natal clinic at the Royal Adelaide Hospital. This was merged with the ante-natal and post-natal clinics at the Queen Victoria Maternity Hospital in 1921. At this hospital in 1927 a special wing was added and named the "T. G. Wilson Ante-Natal Department". It

is understood that the ante-natal clinic estiblished at the Royal Adelaide Hospital was the first such clinic established in Australia. It was not surprising, therefore, that in the new year's honours list in 1950 a knighthood was conferred upon him. He liberally endowed obstetrical and gynæcological teaching at the University of Adelaide and Queen Victoria Maternity Hospital.

The late Sir George Wilson was a man of fine physique and had a strong and determined personality. To students, doctors and nurses he may have appeared somewhat stern and unapproachable. However, such an expression could speedily vanish away and be replaced by kindly blue eyes and a charming smile. He was always ready to help the younger men in specialist practice, and the writer is one of his grateful juniors. Apart from his profession, golf and tennis were his great interests, and he played both until a few years ago. Failing health since then denied him these pleasures and confined him to his home. He was a clear thinker and his faculties remained unimpaired until his death.

Deepest sympathy is felt for Lady Wilson and his two sons, Dr. Graham Wilson, one of the younger surgeons, and Mr. David Wilson, of the Commonwealth Department for External Affairs. He will be much missed by his many friends.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

PROGRAMME FOR JULY, 1958.

Course in Cardiology.

THE fifth annual post-graduate course in cardiology conducted at the Hallstrom Institute of Cardiology, Royal Prince Alfred Hospital, will be held for one week from Monday to Friday, July 21 to 25. The programme is as follows:

Monday, July 21 (Open Heart Surgery in General): 2 p.m., registration and introduction; 2.15 p.m., "Varieties and Techniques of Open Heart Surgery (By-Pass and Hypothermia)", Mr. R. Nicks; 3 p.m., "Physiological Mechanisms Involved", Dr. J. G. Richards; 3.45 p.m., "Anæsthetic Aspects of Open Heart Surgery", Dr. J. Collison and Dr. B. Clifton.

Tuesday, July 22 (Acyanotic Heart Disease): 2 p.m., "Selection of Cases for Surgery", Dr. B. C. Sinclair-Smith; 2.30 p.m., demonstration of cases; 3.45 p.m., "Surgical After-Care of Cardiac Patients", Dr. T. Cartmill and Dr. H. P. B. Harvey.

Wednesday, July 23 (Cyanotic Heart Disease): 2 p.m., "Present Position of Surgery in Relation to Septal Defect and Cyanotic Heart Disease", Mr. P. Tomlinson; 2.45 p.m., "Contribution of Radiology and E.C.G. to the Assessment of Cardiac Surgery Patients", Dr. E. J. Halliday and Dr. J. Radford; 3.45 p.m., case demonstrations.

Thursday, July 24 (Mitral Valve Disease): 2 p.m., "Selection of Patients for Mitral Valve Surgery", Dr. J. H. Halliday; 2.45 p.m., case demonstrations; 3.45 p.m., "Surgical Problems of Mitral Valve", Mr. P. Tomlinson; 4.15 p.m., "Follow-up after Mitral Valvotomy", Dr. B. Learoyd.

Friday, July 25 (Aortic Valve Disease): 1.15 p.m., "Surgery of the Aorta", Mr. A. F. Grant; 2.30 p.m., case demonstrations; 3.45 p.m., "Selection of Patients for Aortic Valve Surgery", Dr. B. C. Sinclair-Smith; 4.15 p.m., summary and discussion.

Patients for the case demonstrations will be available for examination at 1.30 p.m. on the Tuesday, Wednesday and Thursday. On Friday the case demonstration will take the form of a clinico-pathological discussion.

The course is available free of charge to members of the staff of the Royal Prince Alfred Hospital. The fee for attendance by other participants is £6 6s., and early enrolment should be made with the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 4497-8.

Course in the Use of Radioactive Isotopes in Medicine.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a week-end course in the use of radioactive isotopes in medicine will be held at St. Vincent's Hospital on Saturday, July 26, and at The Royal North Shore Hospital of Sydney on Sunday morning, July 27, 1958. By arrangement with the New South Wales State Cancer Council, the course will be free to all medical practitioners. A period for discussion will be provided at the conclusion of each subject. The programme is as follows:

Saturday, July 26, in the Students' Lecture Room, St. Vincent's Hospital: 9.30 a.m., opening address by Professor E. Ford; 10 a.m., "Production and Availability of Isotopes", Dr. J. N. Gregory; 10.30 a.m., "Precautions in Handling and in the Use of Isotopes", Mr. B. W. Scott; 11.30 a.m., "Therapy with External and Implanted Sources", Dr. H. J. Ham and Dr. L. Atkinson; 12.30 p.m., "Use of Isotopes in Neurological Diagnosis", Dr. L. Rail; 2 p.m., "Uses of Isotopes in Hæmatology"—"General Considerations", Dr. R. J. Walsh, "Investigations with Labelled Vitamin B_{12}", Dr. P. K. Lamond, "Investigations with Chromium^{51}", Dr. T. S. Reeve and Dr. H. Kronenberg, "Therapeutic Uses", Dr. R. Walkor; 4.15 p.m., "Use of Radioactive Triolein in Studies of Malabsorption", Dr. M. R. Playoust; 4.45 p.m., "Low Background Beta Counting", Dr. Peter L. Ilbery.

Sunday, July 27, in the Students' Lecture Room, The Royal North Shore Hospital: 9.15 a.m., "Uses of Iodine^{131} in Disorders of the Thyroid Gland", Dr. F. F. Rundle, Dr. T. H. Oddie, Dr. B. A. Curtin, Dr. E. P. George and Dr. K. S. Harrison; 11.15 a.m., "The Effect of Radiation on Nucleic Acid and Protein Synthesis", Dr. Eva Eden; 11.45 a.m., "Uses of Isotopes in Studies of Placental Function", Dr. David Howell; 12.15 p.m., "Uses of Radio-Iodine in Cardio-Vascular Studies", Dr. John B. Hickie.

In order to provide suitable catering facilities, those wishing to participate are requested to make application to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 4497-8. The closing date for applications is Friday, July 18, 1958.

Post-Graduate Conference at Hornsby.

The Post-Graduate Committee in Medicine in the University of Sydney announces that, in conjunction with the Kuring-gai Medical Association, a post-graduate conference will be held at the Hornsby and District Hospital on Saturday and Sunday, July 5 and 6, 1958. The programme is as follows: Saturday, July 5: 2 p.m., "Diabetes in General Practice", Dr. W. Wilson Ingram; 3.30 p.m., "Practical Points in Infant Feeding", Dr. Kathleen Winning. Sunday, July 6: 9.30 a.m., "Recent Advances in Vascular Surgery", Dr. Alan Sharp; 11 a.m., "Some Acute Surgical Emergencies", Dr. Alan Sharp.

The fee for attendance at the course is £2 2s., and those wishing to attend are requested to notify Dr. R. B. Geeves, Honorary Secretary, Kuring-gai Medical Association, 2 Hillcrest Road, Pennant Hills, as soon as possible. Telephone: WJ 1649.

Post-Graduate Conference at Wollongong.

The Post-Graduate Committee in Medicine in the University of Sydney announces that, in conjunction with the South Eastern Medical Association, a post-graduate conference will be held at the Wollongong General Hospital on Saturday and Sunday, July 19 and 20. The programme is as follows: Saturday, July 19: 1.45 p.m., registration; 2 p.m., "Anæsthesia in General Practice", Dr. L. T. Shea; 3 p.m., "Acute Trauma to Chest", Dr. H. M. Windsor; 4.30 p.m., "Hypertension Under Forty", Dr. R. Reader. Sunday, July 20: 9.30 a.m., "Recent Advances in Anæsthesia", Dr. L. T. Shea; 11 a.m., "Recent Advances in Cardio-Vascular Surgery", Dr. H. M. Windsor; 12 noon, "Antibiotics", Dr. R. Reader.

The fee for attendance at the course is £3 3s., and those wishing to enrol are requested to make early application to Dr. F. W. Walton, Honorary Secretary of the South Eastern Medical Association, Fig Tree Crescent, Fig Tree, Wollongong. Telephone: Wollongong B 3339.

MISCELLANEOUS NOTICES.

Lectures at Balmoral Naval Hospital.

Lectures will be held on the second Tuesday of each month from August to December at the Balmoral Naval Hospital, beginning at 2 p.m., and are open to all medical practitioners. The subjects and lecturers will be as follows: Tuesday, August 12, "Antibiotics", Dr. R. Reader; Tuesday, September 9, "Diagnosis and Treatment of Common Back Disabilities", Dr. Allan Dwyer; Tuesday, October 14, "Common Skin Diseases", Dr. A. Geoffrey Finley; Tuesday, November 11, "Management of Diseases of the Ear Commonly Met in the Services", Dr. Alexander Grey; Tuesday, December 9, "The Significance and Management of Alimentary Hæmorrhage", Dr. A. W. Morrow.

Course in Anæsthesia for General Practitioners.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a course in anæsthesia for general practitioners will be conducted by the Department of Anæsthetics and Resuscitation at the Sydney Hospital for two weeks from November 17 to 28, 1958. The course will be a full-time one from 9 a.m. to 6 p.m. daily, consisting of practical demonstrations and tutorials. Enrolments will be limited to three, and applicants should submit particulars of their anæsthetic experience and requirements. Preference will be given to applicants domiciled in New South Wales. The closing date for applications is July 31, 1958, and the selection of candidates will be announced shortly after this date. The fee for attendance is £12 12s., payable after the selection date. Written application, enclosing full particulars, should be sent to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 5535, BU 4497-8. Telegraphic address: "Postgrad Sydney."

Examination Results.

The Post-Graduate Committee in Medicine in the University of Sydney announces that the undermentioned candidates satisfied the examiners at the recent examinations for Part II of the various medical diplomas of the University of Sydney as shown:

Dermatological Medicine: L. J. Cains, H. P. Coats, J. R. Tonkin.

Gynæcology and Obstetrics: J. G. Harrington.

Laryngology and Oto-Rhinology: J. H. Lancken.

Ophthalmology: P. H. Pickering.

Psychological Medicine: J. A. C. Brassil, N. T. Yeomans.

Diagnostic Radiology: J. T. Cullen, P. Grattan-Smith, F. Wishaw.

Therapeutic Radiology: D. P. Ewing.

Refresher Courses, August and September, 1958.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a limited number of vacancies have been reserved for non-members who wish to attend the following courses on enrolment through the Post-Graduate Committee in Medicine:

Royal North Shore Hospital.

The Royal North Shore Hospital "Reunion Week" will be held from Monday to Friday, August 25 to 29, 1958, full time. The guest speaker will be Professor Charles Illingworth, C.B.E., M.D., F.R.C.S., Professor of Surgery in the University of Glasgow. The fee for attendance is £5 5s., and programmes are now available.

Royal Prince Alfred Hospital.

The Royal Prince Alfred Hospital Medical Officers' Association will be holding its "Reunion Week" from Friday to Friday, September 5 to 12, 1958, full time. The McIlrath Guest Professor for 1958 will be Professor Ernst Navratil, Professor of Gynæcology and Obstetrics in the University of Graz. The fee for attendance is £5 5s., and programmes will be available shortly.

Sydney Hospital.

The Refresher Week conducted by the Old Sydney Hospitallers' Club will be held from Monday to Friday, September 22 to 26, 1958, full time. The guest speaker will be Professor Eric Saint, M.D., F.R.A.C.P., Professor of Medicine in the University of Western Australia. The fee for attendance is £5 5s., and programmes will be available shortly.

Method of Enrolment.

Non-members wishing to attend these courses are requested to make direct application to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, from whom further details may be obtained. Telephones: BU 4497-8. Telegraphic address: "Postgrad Sydney."

SEMINARS AT SYDNEY HOSPITAL.

THE following seminars will be held on Wednesdays from 2 to 3 p.m. in the Maitland Lecture Hall, Sydney Hospital, during July and August, 1958. The seminars will be preceded by medical grand rounds (Maitland Lecture Hall) at 12 noon, lunch at 1 p.m., and pathological demonstrations (Maitland Lecture Hall) at 1.30 p.m.

July 2 (Deep X-Ray Department), "Ankylosing Spondylitis and Radiation Treatment", Dr. R. G. Lewis, Dr. P. M. C. Corlette, Mr. K. R. Daymond; July 9 (Neurology Clinic), "Modern Treatment of Parkinson's Disease", Dr. J. W. Lance, Mr. W. Scott Charlton; July 16 (Royal North Shore Hospital), "Some Practical Aspects of Thyroid Disease", Mr. F. F. Rundle, Dr. T. H. Oddie, Dr. I. D. Thomas (Sydney visitors); July 23 (Thoracic Clinic), "Twenty-Five Years of Chest Surgery", Mr. M. P. Susman; July 30, "Some Aspects of Renal Disease", Dr. M. D. Milne (London), overseas visitor; August 6, "Ætiology of Endemic Goitre", Dr. F. W. Clements, School of Public Health and Tropical Medicine, University of Sydney; August 13 (Dermatology Department), "Skin Manifestations of Drug Sensitivity", Dr. Ewan Murray-Will; August 20 (Hæmatology Clinic), "Management of Polycythæmia", Dr. T. I. Robertson, Dr. M. A. Mishkel; August 27 (Cardio-Vascular Clinic), "Modern Diuretics", Dr. J. Raftos, Dr. D. Jeremy.

THE MELBOURNE MEDICAL POST-GRADUATE COMMITTEE.

PROGRAMME FOR JULY, 1958.

Overseas Lecturers.

Dr. M. D. Milne.

DR. M. D. MILNE, M.D., M.R.C.P., of the Post-Graduate Medical School, London, will be visiting Prince Henry's Hospital from June 26 till July 19.

All members of the medical profession are invited to his lecture at a clinical meeting of the Medical Society in the

hospital lecture hall at 8.15 p.m. on Tuesday, July 15, on "Metabolic Diseases of Bone". Admission is without fee.

Dr. Milne is in Melbourne at the invitation of Prince Henry's Hospital and will take part in their course in medicine for higher qualifications at the following times:

1. Case presentations: From 2 p.m. to 3.45 p.m. on June 23, 26 and 30 and July 4, 7, 8, 14, 15 and 18.

2. Lectures: 3.30 p.m., June 25, "A.C.T.H., Cortisone and Aldosterone"; 4 p.m., June 26, "Some Physico-Chemical Aspects of Pharmacology"; 4 p.m., June 27, "Disorders of Acid Base Balance"; 4 p.m., June 30, "Glomerular Nephritis and the Nephrotic Syndrome"; 4 p.m., July 4, "Pyelonephritis and Chronic Uræmia"; 4 p.m., July 7, "Acute Oliguric Renal Failure"; 3.30 p.m., July 9, "Potassium Metabolism"; 4 p.m., July 18, "Pharmacology of Diuretics and Antihypertensive Drugs".

3. Clinico-pathological meetings: Noon, June 30; 2 p.m., July 9 and 16.

Those not already enrolled for the course, or not members of the hospital staff, may attend these sessions for a fee of 15s. per session, payable to account when rendered.

Dr. M. M. Wintrobe.

Dr. M. M. Wintrobe, M.D., B.Sc., Ph.D., Professor of Medicine, Salt Lake City, U.S.A., will visit Melbourne from July 20 to 27 through the generosity of Pfizer Limited. He will deliver two lectures in the B.M.A. Hall as follows: Tuesday, July 22, at 8.15 p.m., "Untoward Effects of Drugs on the Hæmatopoietic System"; Thursday, July 24, at 8.15 p.m., "The Anæmias: Their Pathogenesis and Management".

Country Courses.

Yallourn.—On Saturday, July 12, at the Latrobe Valley Community Hospital, a course on "Rheumatic Heart Disease" will be held. The programme will be as follows: 2.30 p.m., case presentations; 4 p.m., lectures on "Mitral Valve Disease", medical aspects by Dr. J. M. Gardiner, surgical aspects by Mr. K. N. Morris; 8 p.m., quiz session (panel, Dr. J. M. Gardiner, Dr. T. H. Steel and Mr. K. N. Morris). The local secretary is Dr. J. E. Joseph, 237 Princes Highway, Morwell.

Warrnambool.—A clinical demonstration and symposium on "Headache" will be held on Saturday, July 19, at the Base Hospital. the programme will be as follows: 11.30 a.m., preview of cases; 2 p.m., meeting of the subdivision; 2.30 p.m., case presentation and discussion, with the following papers: "The Mechanism of Headache", Dr. Eric Clarke, "The Investigation of the Problem of Headache", Mr. Keith Bradley; 5 p.m., quiz session, with the lecturers forming a panel. The local secretary is Dr. R. R. Sobey, 6 Spence Street, Warrnambool.

The fees for these two courses are £2 2s. each, but those who have paid an annual subscription to the Committee are invited without further charge.

Lecture in the Scientific Basis of Medicine.

The following lecture in the scientific basis of medicine will be given on Friday, July 4, at 8 p.m. in the Main Lecture Theatre, Royal Melbourne Hospital: "The Control of Body Fluid Volume", by Dr. T. E. Lowe.

Course in Neuropathology.

The Department of Mental Hygiene is conducting a course in neuropathology on Thursdays from 1 p.m. to 2.30 p.m. at the Pathological Laboratory, Royal Park Psychiatric Hospital. Application for enrolment should be made to the Chief Clinical Officer, Mental Health Research Institute, Parkville.

Course in Psychiatry.

During July the Australasian Association of Psychiatrists (Victorian Branch) will conduct the following lectures at 8.15 p.m. at the Royal Melbourne Hospital: July 3, "The Clinical Applications of Psychoanalysis" (Lecture 2), Dr. C. Geroe; July 10 and 17, "Psychotherapy in Children and Parents", Dr. W. S. Richards; July 24, "Expressive Painting and Related Methods", Dr. E. C. Dax; July 31, "Child Play as a Therapeutic Method", Dr. W. S. Rickards. The last two lectures deal with aspects of creative activity as a psychotherapeutic agent.

MISCELLANEOUS NOTICES.

Examination Entries.

Candidates are reminded to lodge entries in July for the examinations for the degrees of M.D., M.S., M.G.O., M.R.A.C.P. and for Primary F.R.A.C.S. and F.F.A.R.A.C.S.

Recorded Lectures: Additions to the Library.

The following recorded lectures are now available on request from the Post-Graduate Committee for use on microgroove equipment. Country borrowers have priority. "Chronic Pyelonephritis", by Professor M. L. Rosenheim, of London, recorded on two 10-inch disks with 13 slides (2″ × 2″); "Reactions to Drug Therapy", by Professor Rosenheim, recorded on 10-inch disks with 10 slides; "The Epidemiology of Heart Disease", by Dr. Paul White, of Boston, recorded on two 10-inch disks with 25 slides.

Preliminary Announcements.

Gynæcology and Obstetrics Refresher Course.

A full-time refresher course in gynæcology and obstetrics will be held from August 11 to 12 at the Royal Women's Hospital, Carlton, consisting of lectures, demonstrations and ward rounds by members of the staff. Limited accommodation is available at the hospital for residence. The course is designed for general practitioners and a detailed timetable is available from the Post-Graduate Committee. The fee for tuition is £14 14s., payable to the Committee. Board and lodging, at £7 10s. per week, is payable to the hospital. Entries are due by July 28.

Visit of Dr. John L. McKelvey.

Dr. John L. McKelvey, M.D., of Minnesota, U.S.A., will visit the Department of Obstetrics and Gynæcology, University of Melbourne, for four weeks from August 4. On August 27, at 8.15 p.m. in the University Public Lecture Theatre, he will deliver the Arthur Wilson Memorial Lecture on "Iron Metabolism and the Anæmias of Pregnancy". He will take part in four sessions a week at the Royal Women's Hospital, to which all general practitioners are invited. These will be as follows: Monday mornings, operating session; Tuesdays at 1 p.m., obstetrical ward round; Thursdays at 1 p.m., obstetrical discussion; Fridays at 4 p.m., gynæcological discussion.

Visit of Professor F. A. R. Stammers.

Professor F. A. R. Stammers, of the Department of Surgery, Birmingham University, will visit Melbourne as the Category A lecturer of the Australian Post-Graduate Federation in Medicine from August 30 till September 13. He will lecture in the B.M.A. Hall at 8.15 p.m. on September 1, 9 and 11, and at 5.15 p.m. in the R.C.O.G. Hall on September 4.

Pædiatric Week.

A Pædiatric Week will be held at the Royal Children's Hospital from September 1 to 5. A detailed programme is available from the hospital.

Information.

The address of the Melbourne Medical Post-Graduate Committee is 394 Albert Street, East Melbourne. Telephone: FB 2547.

Notice.

BRITISH MEDICAL ASSOCIATION (NEW SOUTH WALES BRANCH).

THE Attorney-General and Minister for Justice of New South Wales has advised the Medical Secretary of the New South Wales Branch of the B.M.A. that it is proposed to hold a seminar on the penological topic, "The Conflict of Security and Rehabilitation". This is to be held at the University of Technology on July 9, 10 and 11, 1958. There will be seven sessions in all, on the afternoons and evenings of each of the three days and a morning session on the Friday, July 11. The full panel of speakers has not yet been finally decided, but it is expected to contain such distinguished names as Professor Paul Tappan, of New York, Professor Norval Morris, Professors K. O. Shatwell, W. M. O'Neill, W. H. Trethowan and A. K. Stout, of the University of Sydney, Professor Morven Brown, Dr. David Maddison and others.

The Attorney-General and Minister for Justice has asked that this event should be made known to the members of the British Medical Association, and has expressed the hope that those interested will be able to avail themselves of this opportunity to learn of and discuss a vital social problem. Those wishing to attend are asked to apply for tickets as soon as possible to the Medical Secretary of the New South Wales Branch of the B.M.A., 135 Macquarie Street, Sydney. Telephone: BU 5958.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED MAY 31, 1958.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	2(2)	2(1)	2	..	..	..	..	..	6
Amœbiasis	..	..	..	1(1)	..	..	..	..	1
Ancylostomiasis	..	..	1	..	..	..	5	..	6
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	1	..	..	..	..	..	1
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	1(1)	..	..	..	..	..	..	1
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	1	10(9)	..	..	..	1	..	..	12
Diphtheria	1(1)	1(1)	..	..	..	..	..	..	2
Dysentery (Bacillary)	..	57(2)	1	1(1)	4(2)	..	8	..	71
Encephalitis	..	1(1)	..	..	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	49(26)	25(13)	11(1)	4(2)	5(4)	..	..	..	94
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	1	..	1
Leptospirosis	3	..	3	..	..	..	..	..	6
Malaria	..	..	..	..	..	..	1	..	1
Meningococcal Infection	1(1)	..	2	..	..	..	..	..	3
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	..	..	..	2[2]	..	..	2[2]
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	10(7)	..	4(1)	21(17)	4	..	1	40
Salmonella Infection	..	..	..	..	1(1)	..	..	..	1
Scarlet Fever	16(11)	30(23)	3(2)	6(1)	7(7)	..	..	..	62
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	9(3)	..	..	..	9
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	16(11)	26(12)	12(11)	10(8)	6(4)	..	3	..	73
Typhoid Fever	1	..	..	..	1(1)	..	..	..	2
Typhus (Flea-, Mite- and Tick-borne)	..	..	1	..	..	..	..	..	1
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

[2] Suspected.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JUNE 7, 1958.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	1(1)	3(2)	1	..	..	..	..	..	5
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	4	..	..	..	..	..	2	..	6
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	1	..	..	..	..	..	..	1
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	1	12(11)	5	..	..	..	..	..	18
Diphtheria	..	1	..	..	..	..	..	..	1
Dysentery (Bacillary)	..	12	3(2)	1(1)	2(2)	..	..	..	18
Encephalitis	1	..	..	..	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	2	..	..	..	1	..	..	3
Infective Hepatitis	60(29)	25(16)	8	..	19(3)	2	..	..	114
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	1	..	..	..	..	..	..	..	1
Malaria	..	..	..	..	..	..	..	..	..
Meningococcal Infection	3(1)	4	..	..	..	..	..	..	7
Ophthalmia	..	..	..	..	1	..	..	..	1
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	1(1)	..	..	..	..	..	..	..	1
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	1	..	..	..	..	..	..	..	1
Puerperal Fever	..	..	1	..	..	..	..	..	1
Rubella	..	16(11)	..	3(1)	11(9)	..	..	..	30
Salmonella Infection	..	..	..	1(1)	1(1)	..	..	..	2
Scarlet Fever	21(7)	41(31)	3(1)	7(4)	7(6)	1(1)	..	..	80
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	1	..	..	..	..	1
Trachoma	..	..	..	..	1(1)	..	4	..	5
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	28(15)	3(3)	18(8)	6(6)	10(6)	3(1)	1	..	69
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

BRITISH MEDICAL ASSOCIATION (VICTORIAN BRANCH).

Section of Preventive Medicine.

THE Section of Preventive Medicine of the British Medical Association (Victorian Branch) will hold a meeting in the Medical Society Hall, 426 Albert Street, East Melbourne, on Thursday, July 10, 1958, at 4.30 p.m. Dr. E. V. Keogh will speak on "Asian Influenza". All those interested are invited to attend.

Section of Industrial Medicine.

A meeting of the Section of Industrial Medicine of the Victorian Branch of the B.M.A. will be held on Tuesday, July 8, at 8 p.m., and will be a combined meeting with the Industrial and Insurance Nurses' Section of the Royal Victorian College of Nursing. The subject will be "The Role of the Industrial Sister", and the speakers will be Mr. Douglas Donald, Sister Oxer and Sister Benton. A film entitled "Practical Rehabilitation in English Industry" will also be presented. The meeting will be held at the Returned Nurses' Club Room, Second Floor, Anzac House, 4 Collins Street, Melbourne. Supper will be served and all members of the Association are invited.

Corrigendum.

OUR attention has been drawn to two errors in the report of Congress proceedings in the issue of June 7, 1958. On page 787, in the fifth line of the last paragraph, the word "hæmaturia" should be "hæmatemesis". On page 788, in the first line, the word "sodium" should be "calcium". We regret these errors.

Nominations and Elections.

THE undermentioned has applied for election as a member of the Victorian Branch of the British Medical Association:

Talboys, Kenneth, L.M.S.S.A. (London), 1944, c.o. 18 Downes Avenue, Brighton, Victoria.

The undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Harrison, Gordon Alfred, M.B., B.S., 1955 (Univ. Sydney), 13 Chesterfield Parade, Waverley, New South Wales

The undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Ma, Gabriel Wai Chiu, M.B., B.S., 1958 (Univ. Sydney) (provisional registration); Robinson, Kenneth Gordon, M.B., B.S., 1958 (Univ. Sydney) (provisional registration); Stackpool, James Cornelius, M.B., B.S., 1958 (Univ. Sydney); Aitken, Eleanor McLaren, M.B., Ch.B., 1956 (Univ. Glasgow); Nichols, James Johnstone, M.B., B.S., 1956 (Univ. Sydney); Baltgailis, Margers Bertolds, M.D., 1935 (Univ. Riga) (regional registration for Ivanhoe region); Enders, Paul Siegfried, M.D., 1947 (Univ. Innsbruck) (registered under Section 17 (2B) of the *Medical Practitioners Act*, 1938-1957); Raneri, Pietro, M.D., 1948 (Univ. Messina) (registered under Section 17 (2B) of the *Medical Practitioners Act*, 1938-1957).

Medical Appointments.

Dr. I. A. Hamilton has been appointed honorary surgeon at The Queen Elizabeth Hospital, Adelaide.

Dr. M. C. Newland has been appointed honorary anæsthetist at The Queen Elizabeth Hospital, Adelaide.

Dr. R. P. Jepsom has been appointed honorary consulting surgeon at the Royal Adelaide Hospital, Adelaide.

Dr. L. W. Cox has been appointed honorary consulting gynæcologist at the Royal Adelaide Hospital, Adelaide.

Dr. G. E. Sumner has been appointed Pathology Registrar in the Institute of Medical and Veterinary Science, Adelaide.

Deaths.

THE following deaths have been announced:

HEARNE.—Kenneth Goodall Hearne, on May 16, 1958, at Sydney.

MORRIS.—Walter John Morris, on May 18, 1958, at Sydney.

COWAN.—D'Arcy Rivers Warren Cowan, on June 9, 1958, at Adelaide.

LAWSON.—Colin Alexander Lawson, on June 13, 1958, at Sydney.

Diary for the Month.

JULY 1.—New South Wales Branch, B.M.A.: Council Quarterly.
JULY 2.—Victorian Branch, B.M.A.: Branch Meeting.
JULY 2.—Western Australian Branch, B.M.A.: Branch Council.
JULY 3.—South Australian Branch, B.M.A.: Council Meeting.
JULY 4.—Queensland Branch, B.M.A.: General Meeting.
JULY 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee; Organization and Science Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculosis Association of New South Wales.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full data in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

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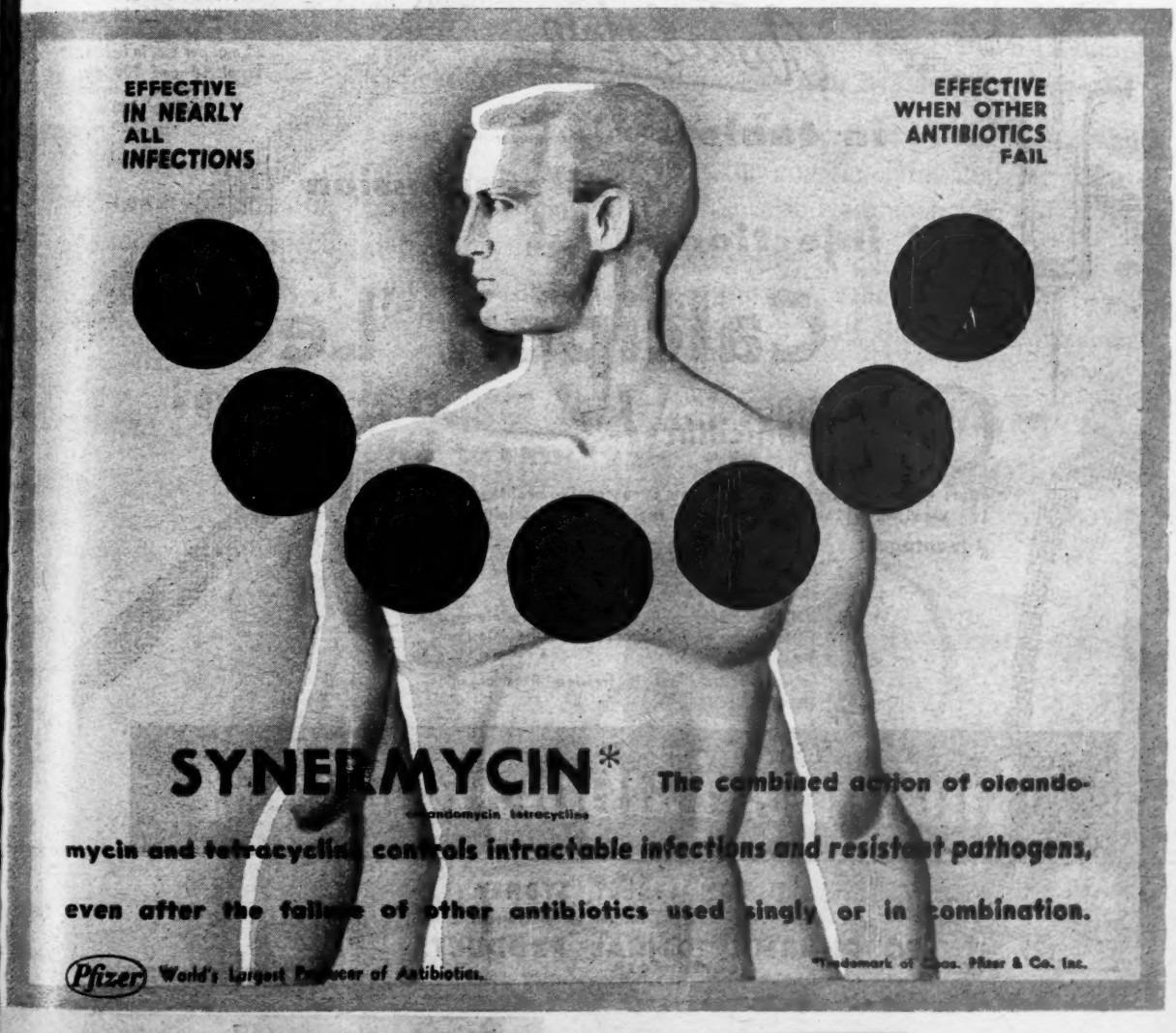
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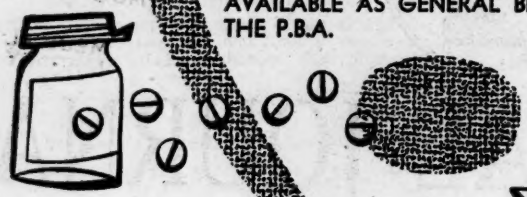

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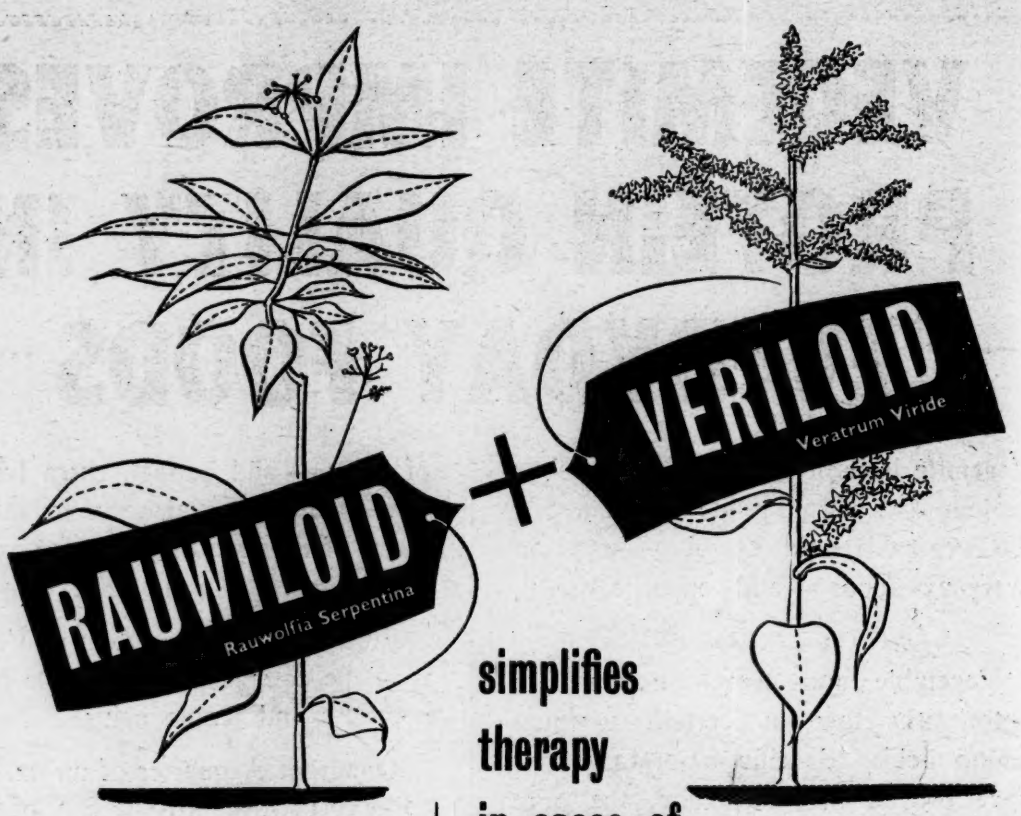

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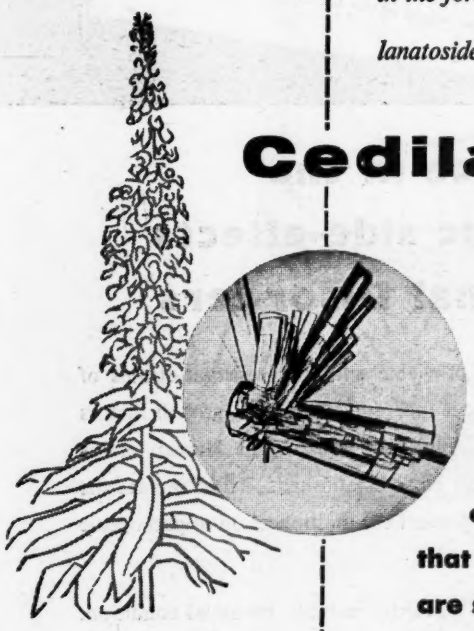

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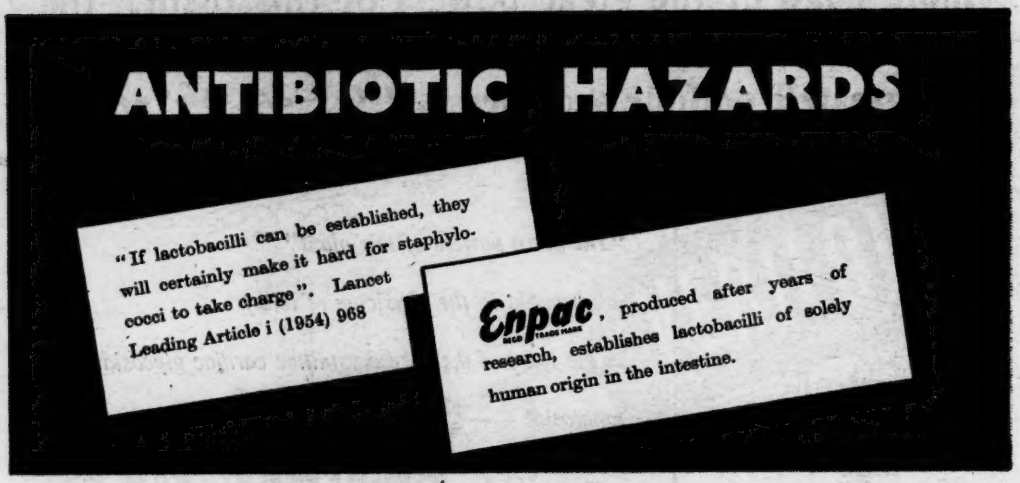
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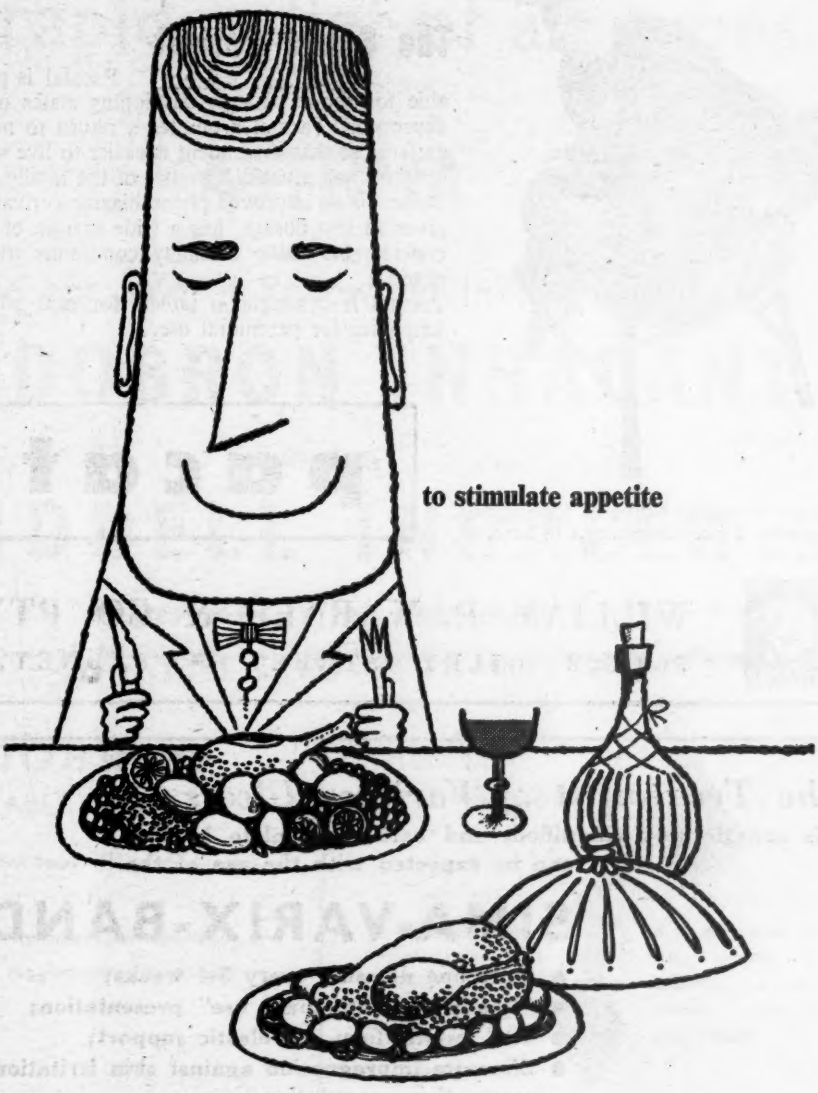

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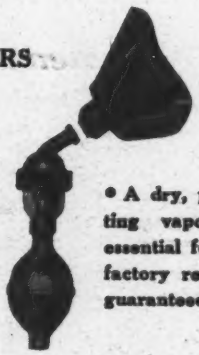

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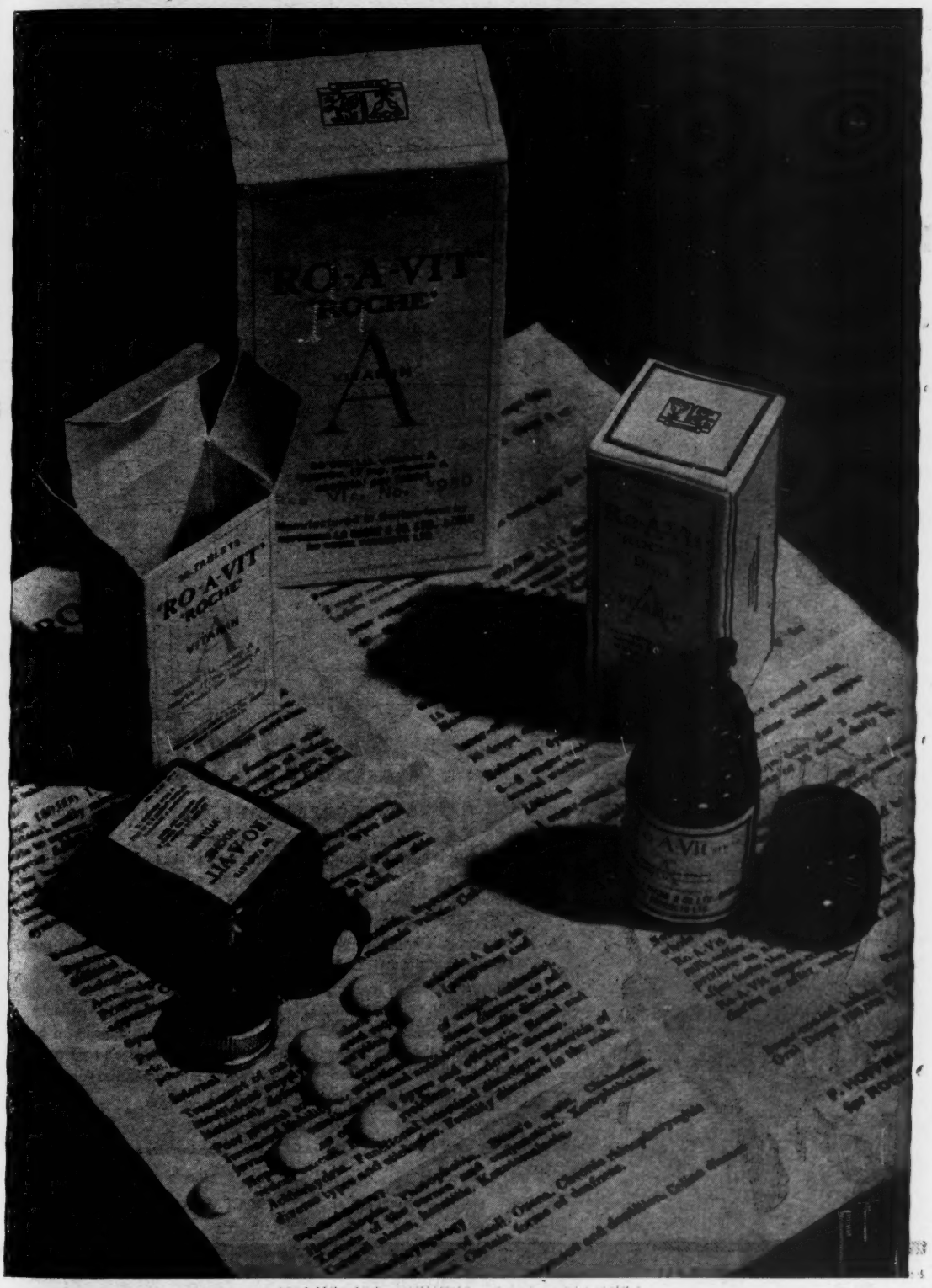

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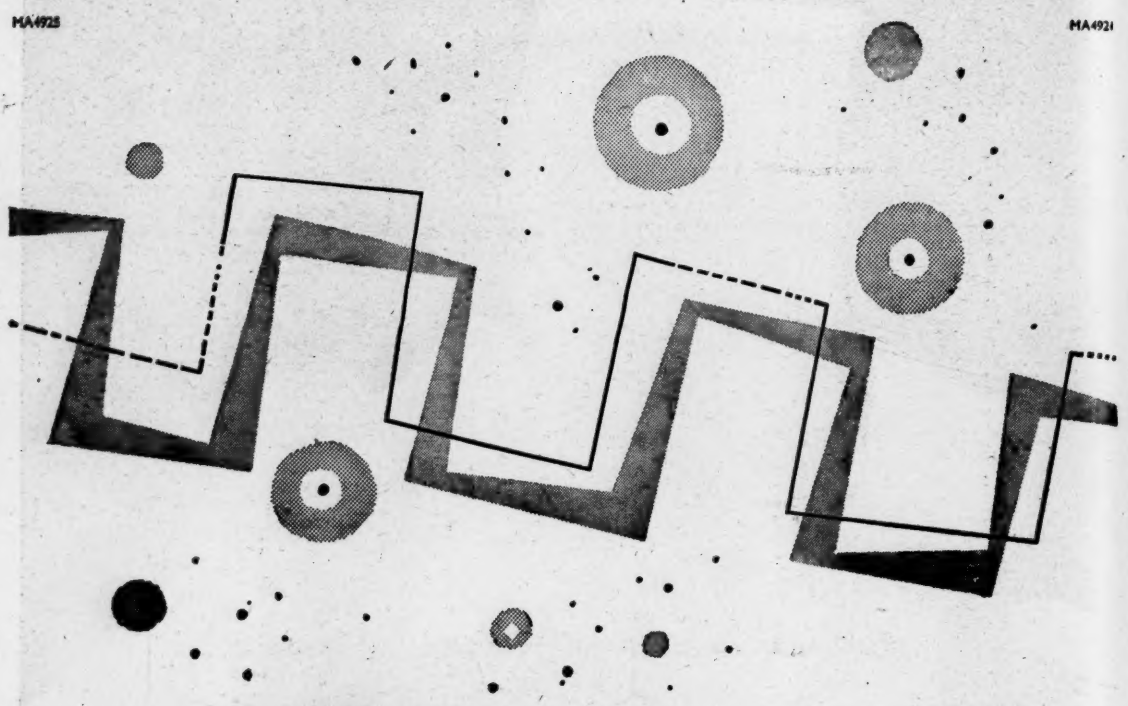

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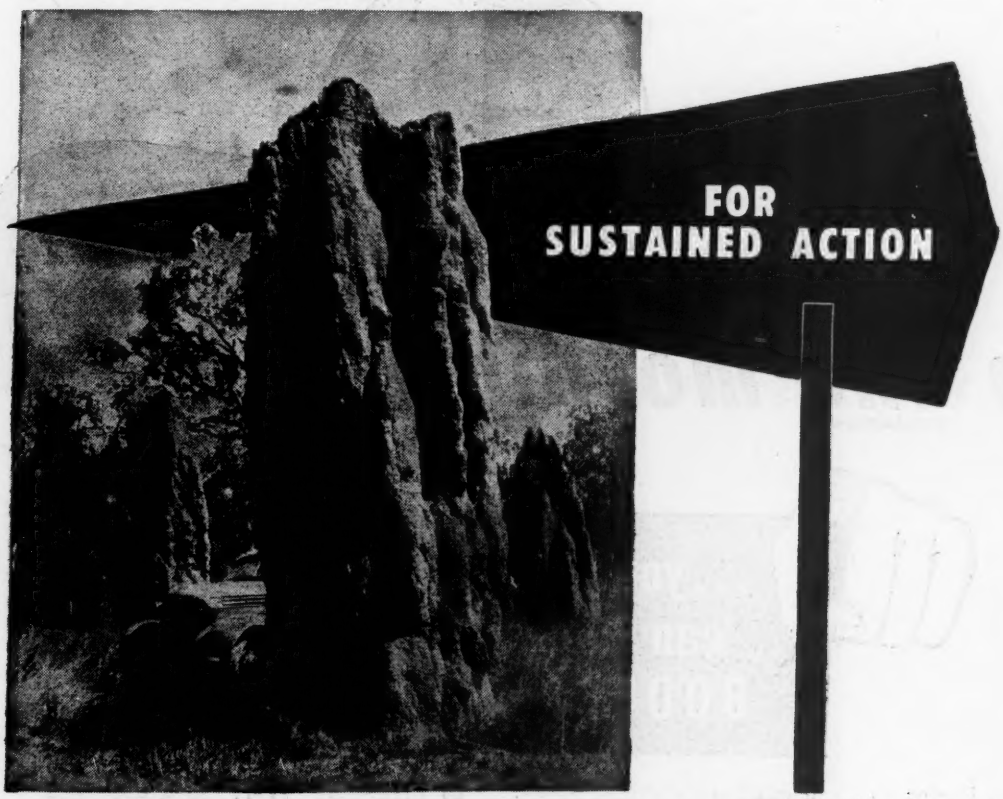

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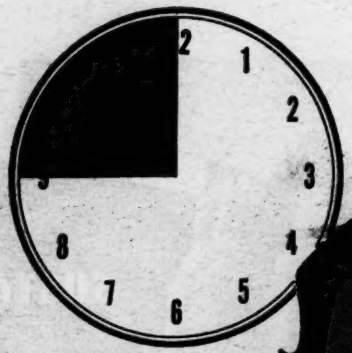

In one morning

...your receptionist can be a skilled BOOKKEEPER!

Yes, Doctor . . . you can have a skilled bookkeeper in one morning with no increase in staff! A bookkeeper who can handle your accounting **without errors or discrepancies** . . . with a time-saving of more than 60% — after **one morning's instruction** in the unique RUF Accounting System.

The RUF system fulfils all accounting requirements with a minimum of staff . . . eliminates cumbersome account books and time-wasting duplication of entries. WHY? Because RUF equipment produces **three or more records at the same time!**

The value of the RUF system to your practice would be verified by the experience of the many Medical Practitioners for whom we have already installed the system.

Cost? The savings you make by installing RUF accounting are mostly recouped within a very short time. A phone call or brief note will bring a RUF expert to your surgery—without the slightest obligation to you.

- **THE RUF WAY** . . . your secretary writes receipts, bank deposit slips and cash sheets in one operation.
- **THE RUF WAY** . . . your secretary writes memorandum of fees, patients' cards, summary sheet of charges and payments made in one operation.
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HAND OR MACHINE METHODS

The Ruf Recording Tablet will solve the accounting difficulties of most one-man practices. For large partnerships the Ruf Intromat or the Hand Method is the low-cost solution for modern accounting to all medical bookkeeping problems.

'Phone JY 1926 or write for consultation without obligation!

RUF ACCOUNTING

for to-morrow's accounting to-day!

RUF ACCOUNTING SYSTEMS (N.S.W.) PTY. LTD., 303 Penshurst St., Willoughby. JY 1926, JY 2713.
Victorian Distributors: Harvey Nudex Pty. Ltd., 555 Collins St., Melbourne. MB 4011.

The swinging door

. . . and another sprained thumb to treat with Elastoplast Plaster

An ill-judged approach to a powerfully sprung swing-door can be productive of a variety of minor trauma, a sprained thumb or finger perhaps being among the more common.

Elastoplast Plaster is flesh-coloured, made from light-weight cloth, and ideal for on-the-spot strapping and retention of dressings. It is far more comfortable and more efficient than a rigid plaster.

Elastoplast

TRADE MARK

ELASTIC ADHESIVE PLASTER B.P.C

To strap a dislocated thumb one-inch Elastoplast is used, applied spica-fashion.

ELASTOPLAST: elastic adhesive plaster B.P.C. 1″ or 2″ x 1¾/2 yds. stretched and 1″ x 5/6 yds. stretched.

an S&N product

Elastoplast is made by: T. J. Smith & Nephew Ltd., Hull, England.

Available from . . . D.H.A. and Surgical Houses throughout Australia and New Zealand.

E115

In the prevention of

Post partum haemorrhage

HYALASE

Trade Mark

"the spreading factor"

with ergometrine

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BENGER LABORATORIES LIMITED, HOLMES CHAPEL, CHESHIRE, ENGLAND.

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HL

Debendox at bedtime stops morning sickness ...before it starts

A unique timed-release coating

triggers the antiemetic effect 4-6 hours after ingestion of the tablet.
Provides complete relief from nausea when your patient needs it most — upon awakening.

three antiemetic actions:

1. Proved, highly effective antinauseant	**Decapryn**
2. Fast, safe antispasmodic	**Merbentyl**
3. Well-established nutritional supplement	**Pyridoxine**

simple dosage...prompt and prolonged relief

...2 tablets at bedtime. In severe nausea, 1 additional tablet morning and afternoon. Usually effective from the first day of treatment.[2] Supplied in bottles of 30 and 100.

References: 1. Nulsen, R. O.: *Ohio State M. J.* 53:665, June 1957.
2. Personal Communications, 1956-57.

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Literature: Wm. S. Merrell (Pty.) Ltd., Box 58, Fairfield, N.S.W.
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in pregnancy **Debendox**

to reduce
cough discomfort
and complications
in tracheobronchitis

TOCLASE*

brand of carbetapentane citrate

Affords selective, sure, safe control of the cough reflex without narcotic or opiate side effects

In tracheobronchitis, cough is usually dry in the early stages, but becomes productive as the disease progresses and mucus secretion is stimulated. The cough results from the irritation of the nerve endings in the mucosa by diffuse inflammation, by exudate upon the mucosal surface, or as is frequently the case in the later stages of the disease, by collections of mucus or mucopus that develop from the increased secretion due to irritation and acting as foreign bodies in producing mechanical stimulation.

Occasional areas of ulceration are also capable of producing cough. Toclase quickly brings needed relief by selectively inhibiting the cough reflex without the adverse side effects encountered when codeine or codeine-like remedies are applied.[1]

* trademark of Chas. Pfizer & Co. Inc.

[1] Parish, F. A.: M. Times, 83: 870 (Sept.), 1955.

Pfizer

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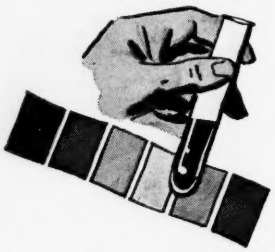
a system of URINE TESTING...

. . . to be effective, must be *simple in technique* with a minimum of variable factors; it must be as *specific* as possible for the abnormality to be detected —it must be sufficiently *sensitive* to clinically significant amounts of the abnormality without giving positive results to sub-clinical traces—it must have *proven reliability* and *accuracy* and be accepted by leading specialists and teaching bodies.

THE AMES RANGE OF DIAGNOSTIC URINE TESTS...

. . . meets all these requirements and in addition leads to *considerable saving in time and labour*. The tests are complete in themselves, require *no heating* and thus *eliminate mess*. Tests may be carried out *in the home or surgery* with equal ease.

CLINITEST * Reagent Tablets



for the detection and estimation of SUGAR, are used by hospitals and surgeries and by diabetic patients throughout Australia.

"The CLINITEST method has proved entirely satisfactory, replacing Benedict's as it is quicker and cleaner and probably cheaper in cost when time is considered."[1]

A ONE-MINUTE TEST WITH FULL COLOUR CALIBRATION

SIMPLE STANDARDIZED TECHNIQUE

"The simplification and convenience of the tablet technique make it the method of choice in almost all circumstances, certainly in the treatment of known diabetics, either in the clinic or by the patient in his home."[2]

NO HEATING REQUIRED — TIME SAVED — MESS ELIMINATED

ACETEST * Reagent Tablets

for the detection of ACETONE and DI-ACETIC ACID are rapidly replacing time-consuming tests in all fields of medicine.

SPECIFIC . . ECONOMICAL . . EXTREME SIMPLICITY: place one drop of urine on ACETEST tablet—compare with colour scale 30 seconds later!

"There is no excuse for not testing the urine for acetone. ACETEST tablets are entirely suitable and can very easily be carried in one's bag, or prescribed to patients for their home use."[1]

SENSITIVE TO CLINICALLY SIGNIFICANT AMOUNTS OF KETONURIA.

In conjunction with CLINITEST tablets, **tests for sugar and acetone** may be carried out simultaneously, **in one minute.**

CLINISTIX * Reagent Strips

for the detection of *'True' Glucose*

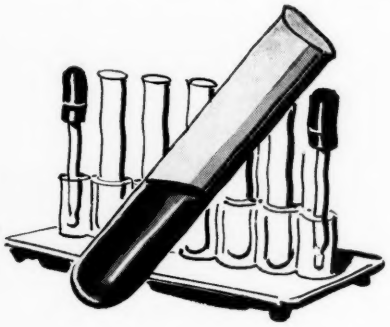
DIP AND READ!

Simplicity itself . . . ideal for routine screening.

"It should prove invaluable to the general Practitioner both in his surgery and during domiciliary consultations."[2]

N.B.: The enzyme test is qualitative only. The intensity of colour development is not a reliable quantitative guide and CLINITEST should be used for all quantitative estimations.

ALTEST * Reagent Tablets



for the detection of PROTEIN (Albumin)

Drop one ALTEST tablet into 4 c.c. of urine—30 seconds later record as:

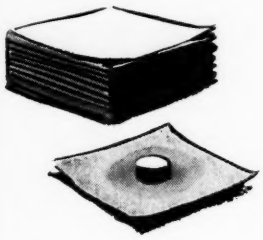
Negative—clear solution.

Positive—cloudiness of precipitate.

"ALTEST tablets are ideal for use in the patients' homes or out-of-the-way places."[4]

NO HEATING—EXTREMELY SIMPLE—CARRIED OUT ANYWHERE

OCCULTEST * Reagent Tablets



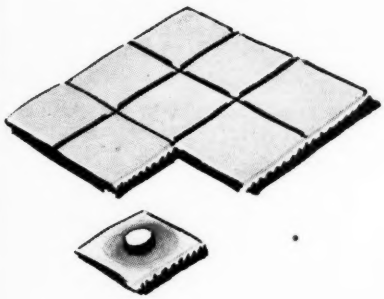
for the detection of BLOOD

RESULTS RECORDED IN TWO MINUTES—EXTREMELY SENSITIVE

"The results of microscopy are often invalidated by hæmolysis in the urine before or after voiding . . . the advantages of a chemical test for screening purposes, such as during anticoagulant therapy or following known diseases of the kidney or urinary tract, or bleeding disease, are therefore obvious."[5]

RELIABLE . . WIDELY ACCEPTED . . NO DANGEROUS CHEMICALS

ICTOTEST * Reagent Tablets



for the detection of BILIRUBIN

RAPID . . . detects urine bilirubin in less than a minute.

RELIABLE . . . fewer false positives or false negatives.

SPECIFIC . . . unaffected by any known physiological constituents of urine.

SIMPLE . . . easily performed anywhere, anytime.

SENSITIVE . . . reveals as little as 0·05 mg. % of bilirubin.

"ICTOTEST is much the most convenient method for detecting bile pigments in patients' homes, hospital wards and clinics."[4]

BIBLIOGRAPHY: [1] Burston, R. A., M.J.A., 389, March 22, 1958. [2] Gray, C. H., and Millar, H. R., B.M.J., (1361-1365), June 20, 1953. [3] Luntz, G., B.M.J., 1: 499, March 2, 1957. [4] Walker, G. J., for Industrial Nurses (1957), 9: 39. [5] Gray, C. G., Practitioner, 179 (322-326), September, 1957.

* *Registered Trade Mark*

Available Packs of AMES DIAGNOSTIC REAGENTS

CLINITEST Reagent Tablets
Complete set contains bottle of 36 tablets with test tube, dropper and colour scale, in compact bakelite case.
Refills: bottles of 36 tablets.

CLINISTIX Reagent Strips
Bottles of 60 strips.

ACETEST Reagent Tablets
Bottles of 100 tablets with colour scale.

ALTEST Reagent Tablets
Bottles of 200 tablets.

OCCULTEST Reagent Tablets
Bottles of 50 tablets with test papers.

ICTOTEST Reagent Tablets
Bottles of 50 tablets with test mats.

Complete **DIAGNOSTIC KIT,** in sturdy clear plastic containers.
Contains 1 **Clinitest set,** 1 bottle each of **Clinistix, Altest, Acetest, Occultest** and **Ictotest,** together with 6 test tubes and 3 droppers.

TEST TUBE PACK of sturdy plastic—designed for surgery use with **Clinitest** and **Altest.** Complete with 6 test tubes and 2 droppers.

COMBINATION PACK for Sugar and Albumin.
Contains 1 bottle each of **Clinistix** and **Altest,** 2 test tubes, wire brush.

Supplies are available now through all surgical supply houses and normal pharmaceutical channels.

Please write for illustrated instructional brochure and free wall chart for use with CLINITEST and ACETEST.

Further information and references of the Ames range of diagnostic reagents for routine urine testing are available on request.

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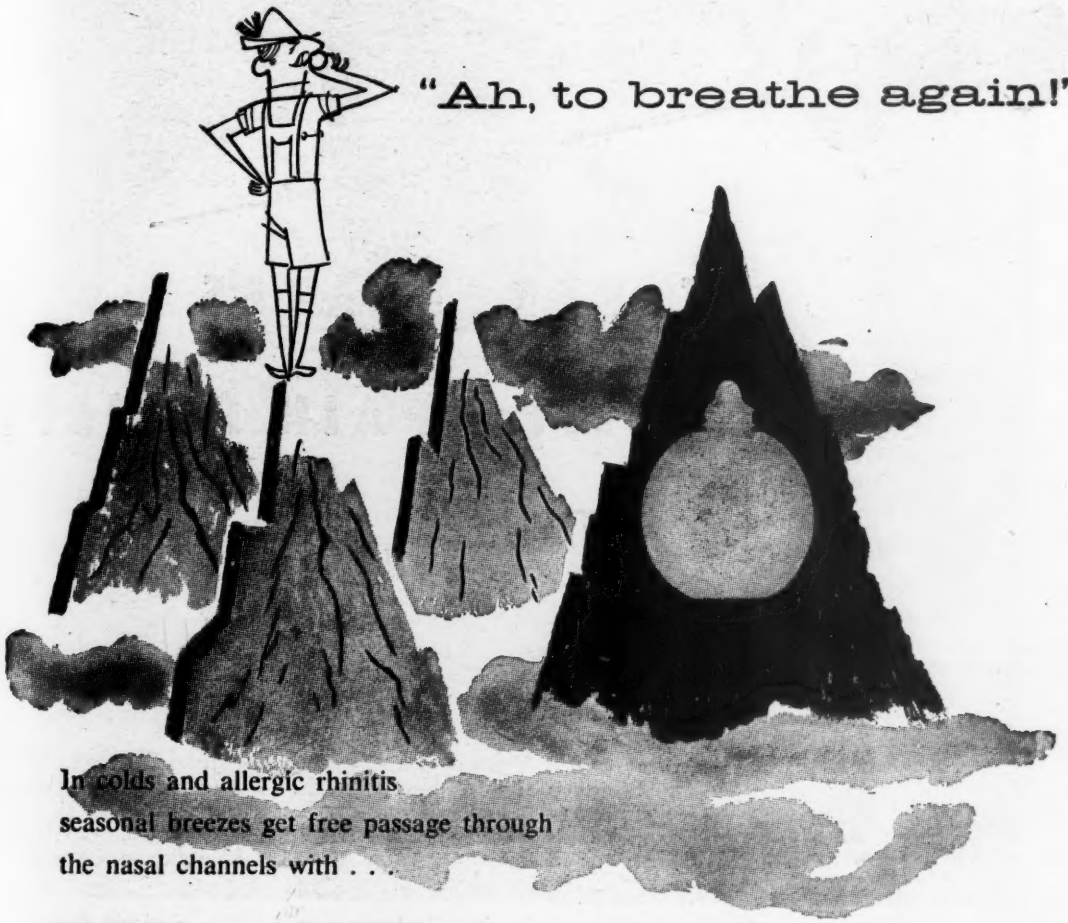
Modern surgeries are equipped with the Ames range of diagnostic urine tests.
Manufactured in the U.K. by Ames Company (London) Ltd., Bridgend, South Wales, for Ames Company Inc., Elkhart, Indiana, U.S.A.



In colds and allergic rhinitis
seasonal breezes get free passage through
the nasal channels with . . .

Neo-Synephrine

HYDROCHLORIDE

NASAL SPRAY

New

"Syndromatic" Control of the Common Cold and Allergic Rhinitis Orally

Neo-Synephrine Compound Cold Tablets

PLASTIC SQUEEZE BOTTLE

with the micromist spray

The snug little bottle will not break or spill . . .
stays with patients when they need it.

Supplied in four convenient dosage forms:
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Dencorub may be prescribed as a supplement to corticoid therapy, as well as following baking, infra-red lamps, moist heat and other forms of physiotherapy.

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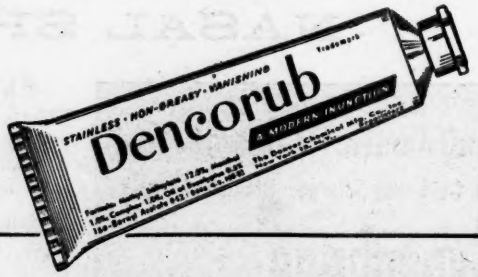
Methyl Salicylate, Camphor, Menthol, Oil of Eucalyptus, Iso-Bornyl Acetate in a special endermic base.



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Help bring her back to normal

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Most bacterial respiratory infections are caused by staph-, strep- or pneumococci —the very organisms most sensitive to Pædiatric Erythrocin.

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Erythrocin destroys only the harmful coccic invaders, rarely disturbs normal flora. Thus little patients seldom get side effects. Nor do they get allergic reactions.

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This low-cost, disposable plastic oxygen mask provides a highly efficient method of oxygen inhalation. It is light in weight and easy to wear. Supplied in adult and child sizes, also with wide-bore oxygen connection suitable for administration of aerosols, antibiotics and inhalation detergents.

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CM.26

When respiratory infections
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'S-MEZ' is short for 'SULPHAMEZATHINE' Sulphadimidine B.P.

provides an effective first line of attack

It is particularly useful against pneumonias and upper respiratory infections, and can be relied upon to deal adequately with the secondary bacterial infections associated with influenza and the common cold.

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Tablets and ampoules available on N.H.S.

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These capsules combine the pharmacological effect of the individual ingredients, namely—

Cardophyllin (Aminophylline)	1½ gr.
Quinidine Sulphate	1½ gr.
Phenobarbital	¼ gr.
Strychnine	1/60 gr.

Packed in bottles of 100 capsules.

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†*Please Note! Achromycin V Syrup . . .*

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LEDERKYN* TABLETS (0·5 G.) . . . .

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ONE TABLET DAILY for sulpha-sensitive bacterial infections

Dosage—Adults: initially 1 G., thereafter 0.5 G. once daily
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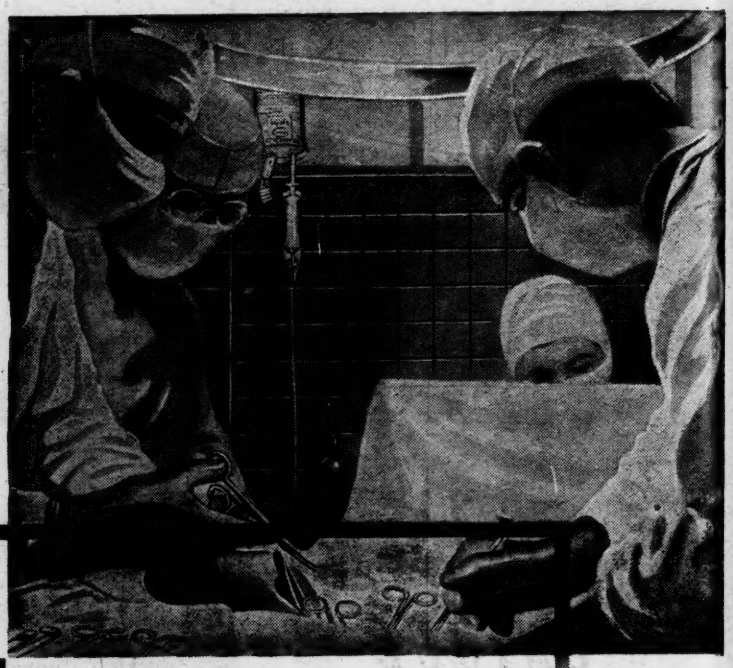
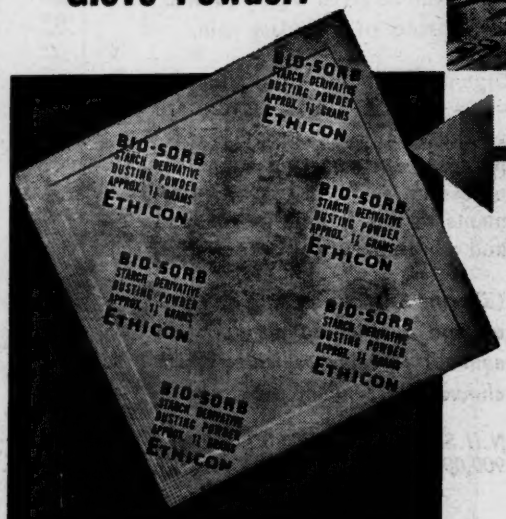
CIL1

Minimise the risk of post-operative adhesions with

BIO-SORB

Glove Powder.





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GLOVE POWDER

Now! **Prepacked in 1½ gram envelopes ready for auto-claving...**

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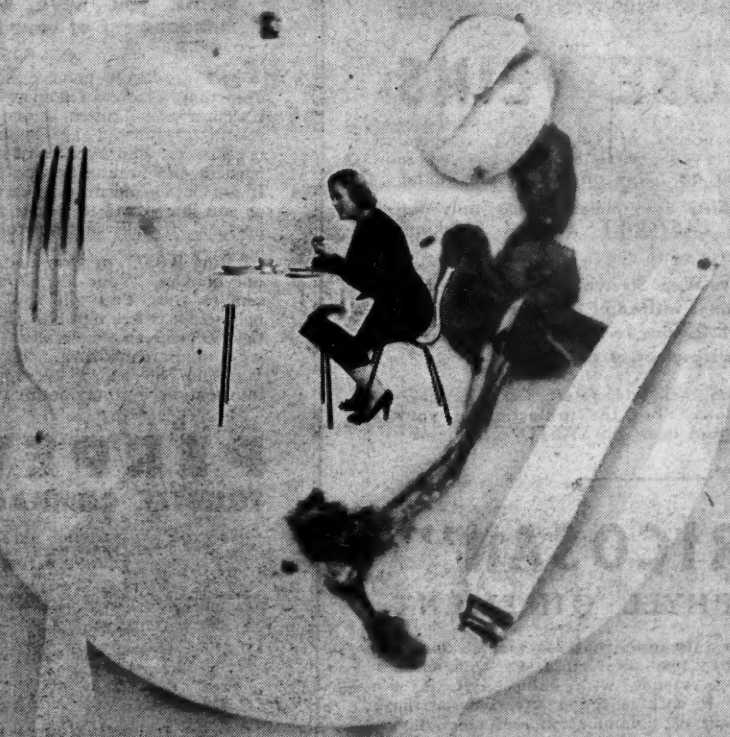
who is tense and anxious

restores composure and controls appetite all day long



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We stand behind the world-wide reputation of LASTONET Surgical Nylons. For the protection of your patients prescribe and insist on LASTONET.

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VARICOSAN is an antiseptic, soothing and deodorant ointment containing 10% zinc oxide, 4% chlorbutol, 0·25% parachlormetaxylenol, with chlorophyll, in a hydrophilic base. It will be found effective for the relief and treatment of inflammation and most dermatose conditions associated with varices and may be prescribed with confidence that it will not destroy the elasticity of any elastic supports worn over the treated area.

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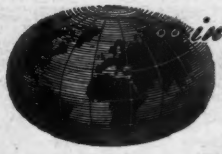

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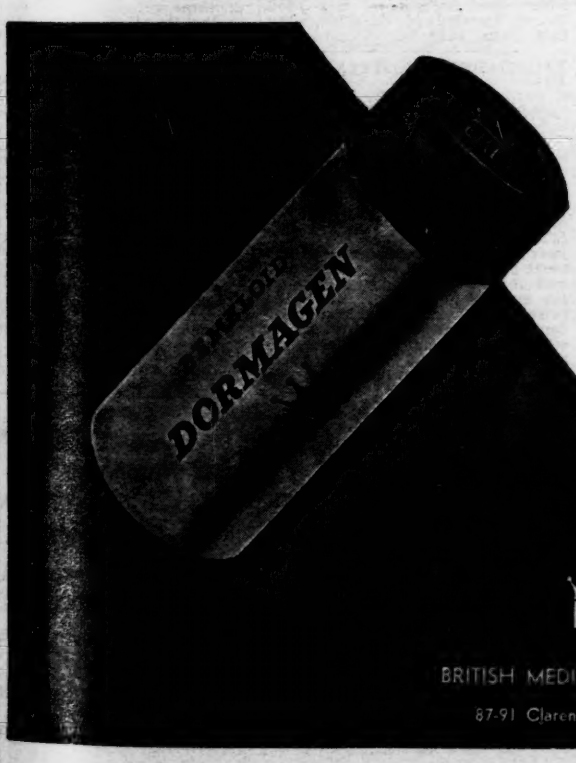

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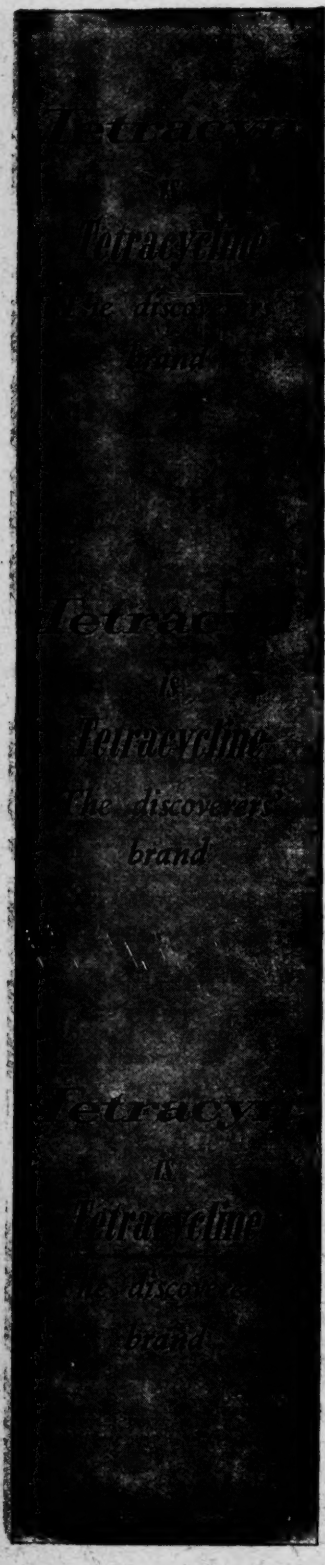

ATHERTON HOSPITALS BOARD, QUEENSLAND.

APPLICATIONS are invited for the position of Junior Resident Medical Officer at the Atherton Hospital, North Queensland. Salary classification first year £1230, second year £1385, plus basic wage adjustment £49 10s. and northern allowance of £48 per annum. A furnished flat is provided to accommodate a married couple. Free board and lodging for a single person. Daily average in-patients 88, out-patients 60.

Atherton is situated on the Atherton Tablelands sixty miles from Cairns, and is 2,000 feet above sea level, and connected to all main centres by rail and bitumin roads.

Apply Secretary, ATHERTON HOSPITALS BOARD, Atherton.

AUSTIN HOSPITAL, HEIDELBERG, VICTORIA.

PATHOLOGY REGISTRAR.

APPLICATIONS are invited from suitably qualified medical practitioners for the above position.

Salary at a rate within the range £1200-£1475 per annum, according to qualifications and experience.

Board and residence provided.

An allowance at the rate of £200 per annum is payable to successful applicant who wishes to live out.

Further details regarding this position may be obtained from the Medical Superintendent (telephone JL 1201).

Applications in writing, stating age, marital status and previous experience, together with copies of testimonials, will be received by the undersigned.—W. M. POWELL, Manager and Secretary.

ASSISTANT WANTED by large group practice. £50 p.w. Petrol and oil provided. Four weeks' holiday. Good working conditions. Reply 19 Gerrale Street, Cronulla, N.S.W.

ASSISTANTSHIP, VIEW THIRD PARTNERSHIP, available in expanding practice base hospital town (N.S.W.). Salary £60 per week. Furnished house available. Full third partnership after three months as assistant. Liberal terms. Reply No. 673, c.o. this office.

CAPABLE G.P. WANTED, view partnership or succession, in Sutherland Shire, N.S.W. House available during trial period. Premium £2400 on terms. Write age and experience to No. 678, c.o. this office.

ASSISTANT REQUIRED, view early partnership, in Sydney suburban group practice with rostered week-ends and nights. Accommodation available. Salary £2200 p.a. plus car allowance and accommodation. Reply No. 669, c.o. this office.

ASSISTANT WANTED, view partnership, inner metropolitan area, Sydney. Group practice. Live out. £45 p.w. plus £5 car allowance. Petrol and oil provided. Liberal bonus. Good working conditions. Reply No. 666, c.o. this office.

LOCUM (MALE), experienced, available for suburbs or country. YA 2528 (Sydney).

GYMPIE HOSPITALS BOARD, QUEENSLAND.

APPLICATIONS are hereby invited for a Junior Resident Medical Officer for the Gympie Hospital

Salary range: First year experience £1272 per annum, second year experience £1427, subject to basic wage adjustments.

Single quarters available or £100 per annum allowance.

Applications, giving full particulars of age, experience, marital status, etc., and stating earliest date available for duty, together with copies of references, should be addressed to the Secretary, Gympie Hospitals Board, Gympie, Queensland.

CAIRNS BASE HOSPITAL, QUEENSLAND.

RESIDENT MEDICAL OFFICER.

APPLICATIONS are invited for a position as Resident Medical Officer at the Cairns Base Hospital. Vacancy will exist in August, 1958. Medical staff comprises medical superintendent, senior resident medical officer and five resident medical officers. Hospital daily average 190. Active surgical unit. Salary classification: first year £1315, 2nd year £1470, which includes allowances to date. Board and accommodation is provided single appointee or £100 allowance in lieu to married officer living out. Specialists in surgery, medicine, orthopædics, E.N.T., ophthalmology, dermatology, psychiatry, radiology and radium visit the hospital at regular intervals. Applicants to state age, qualifications, experience and marital status; also attach copies of testimonials. Notice of termination of service one month either side. Applications close with the Secretary, Box 902, Cairns, Queensland, on Wednesday, 23rd July, 1958.

BUNDABERG HOSPITAL, QLD.

JUNIOR RESIDENT MEDICAL OFFICER.

APPLICATIONS are invited for vacancies as Resident Medical Officers, Bundaberg Hospital, Qld. Salary classification: first year £1230, second year £1385, third year £1550, plus basic wage adjustment presently £60 p.a. Free board and lodging in excellent quarters for single appointees. Staff comprises superintendent, four residents and visiting specialists in surgery, orthopædics, medicine, eye and ear, nose and throat. Applicants to state qualifications, age and marital status. Successful appointee must produce evidence of registration with Queensland Medical Board on commencing duty. Apply to Secretary, Hospitals Board, Bundaberg, Qld.

MEDICAL CLINIC. Suites available for radiologist, dermatologist and physiotherapist. Near western suburb (Sydney). Suites at present medical practice. Reply No. 660, c.o. this office.

SOLO PRACTICE FOR SALE. Industrial area on coast of N.S.W. Capable of expansion by two doctors. Good hospital facilities. Prospective purchaser could lease or work as assistant at £35 per week plus car allowance and bonus. Reply No. 550, c.o. this Office.

THE PRINCE HENRY PITAL, LITTLE SYDNEY.

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APPLICATIONS are from medical graduates wi requisite qualifications an perience to take charge Bacteriology Department above hospital under the of the Director of the Pa Department.

Salary in accordance wi schedule of rates applica specialists in hospitals, as p by the agreement betwe B.M.A. and the Hospitals mission. (Range: £2000 to p.a.)

Written applications, t with copies of testimonials addressed to the General Superintendent.

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APPLICATIONS, closing July, 1958, are invited medical graduates for the p of Biochemist.

The successful applicant w in charge of the Departme Biochemistry and will be r sible for the routine clinic chemistry of Sydney Hospita

The salary, according to fications, will be in the ran Junior specialists, £2029-£ Specialists, £2729-£3529.

Further information ma obtained from the Director Institute.

Applications, stating qu tions and experience and the of three referees, to be add to the President, Sydney Ho Sydney, and envelopes en "Biochemist".—E. C. D Secretary.

ASSISTANT WANTED, partnership, general pr western suburbs, Sydney. lent facilities and liberal t Experience in anæsthesia de Accommodation available. £2250 p.a. plus £5 p.w. car ance. Reply, stating experi No. 677, c.o. this office.

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ATER MISERICORDIÆ HOSPITAL, NORTH SYDNEY, N.S.W.

APPLICATIONS, in the prescribed form, are invited for appointment to the honorary medical staff of the Mater Misericordiæ Hospital, North Sydney, as Temporary Relieving Assistant Ophthalmologist.

Applications should be in the hands of the undersigned not later than July 19, 1958.—H. M. SAXBY, Medical Superintendent and Chief Executive Officer.

LOCUM, view assistantship or possible lease, required from August to mid-September, or earlier if necessary. Well-organized Illawarra practice (Sydney). £50 p.w. plus usual extras for period of locum. Reply No. 687, c.o. this office.

YOUNG TRAINED NURSE, three certificates, requires position as receptionist to a doctor, preferably in suburb (Sydney). Would be prepared to live in and act as baby sitter. Reply No. 688, c.o. this office.

ASSISTANT WANTED, view partnership. Surgical or obstetrical skill necessary. Southern suburbs, Sydney. £42 plus petrol, oil and car allowance. Must be prepared for moderate income with more liberal time off. Reply No. 686, c.o. this office.

SWISS DIAGNOSTIC SET FOR SALE. First-class quality, never been used, very compact, including ophthalmoscope, otoscope, etc. Will accept 18 guineas. Write F.J.D., P.O. Box 350C, Melbourne, C.1.

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Solo practice in progressive town. Average G.C.T. £5000 per annum. Goodwill £1800. Well-appointed home, large surgery block and X-ray room in beautiful gardens, £6500. Terms available.

No. 1451: South Coast, N.S.W.

Solo, unopposed practice in delightfully situated town. G.C.T. average £3000. 26-bed hospital four miles distant. Property for purchase £6000. Goodwill £1500. Cash required £4500. Balance by arrangement.

No. 1455: North-Western N.S.W.

Partnership. Three months' assistantship view to purchase one-third share. Salary as assistant £60 p.w. inclusive of car allowance. Cash takings £16,200. Goodwill, one-third share, £3500. Furnished home for £5 5s. weekly rental. Practice in large town with base hospital.

No. 1446: Southern Coastal Town, N.S.W.

Solo opposed practice taking £5000 per annum. Goodwill £2000. Surgery and waiting room. Furnishings, fittings, instruments, short-wave and X-ray equipment and medical supplies £500 or market valuation. Residence, surgery and waiting room available for rental of £5 5s. per week.

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BALMAIN AND DISTRICT HOSPITAL, N.S.W.

APPLICATIONS are invited for the position of Honorary Allergist at the above-mentioned hospital.

Apply, stating age, qualifications, experience, and enclosing copies of references, to H. W. SIMPSON, Chief Executive Officer and Secretary, Booth Street, Balmain, N.S.W. Telephone WB 2013.

ST. VINCENT'S HOSPITAL, SYDNEY.

APPLICATIONS, addressed to the Superior-General at the hospital, are invited for the following vacancies on the honorary medical staff:

Radiotherapist.
Assistant Anæsthetist.

Applications, closing on 25th July, 1958, must be made on the official application form, which is obtainable at the hospital.

MODERN ROOMS AVAILABLE IN ELITE KINGS CROSS PROFESSIONAL BUILDING.

Comprising waiting room, two surgeries, office with 'phone, gas, compressed air, provision for inter-office 'phone, kitchen and bathroom. Modern floor coverings. Long lease. Mr. BLACK, MA 5697, FW 5037 (Sydney).

ASSISTANT WANTED, view partnership, for two-man country practice, N.S.W. Excellent accommodation and hospital facilities. Married man preferred. Salary £2200 per annum plus car expenses. Reply No. 684, c.o. this office.

THE ROYAL WOMEN'S HOSPITAL, MELBOURNE, VIC.

PART-TIME RESUSCITATION OFFICER AND OFFICER-IN-CHARGE OF BLOOD BANK.

APPLICATIONS on the official form are invited from duly qualified medical practitioners for the above-mentioned position.

The successful applicant will be responsible for the supervision of the hospital's Blood Transfusion Service and collection of blood in blood bank.

Salary for the part-time position will be £750 per annum.

For further particulars apply to the Medical Superintendent.

Applications close on 30th June, 1958. — A. J. CUNNINGHAM, Manager and Secretary.

LIVERPOOL DISTRICT HOSPITAL, N.S.W.

MEDICAL SUPERINTENDENT.

APPLICATIONS are invited from duly qualified registered medical practitioners with the necessary hospital experience for the position of Medical Superintendent at the new 210-bed Liverpool District Hospital.

Salary range £2500-£2750 per annum.

Applications should give full details of qualifications, age, experience, marital status and war service (if any), and should be accompanied by copies of three recent testimonials.

Applications close with the undersigned on Friday, 4th July, 1958.—JAMES F. LIDDY, Secretary.

MEDICAL PRACTITIONERS HOUSING COMMITTEE VICTORIA.

DOVETON (DANDENONG ESTATE.

APPLICATIONS are invited from medical practitioners interested in establishing a practice in the above area.

A house will be made available to the successful applicant who will be required to maintain a full-time service.

Applications, addressed to the Secretary, Housing Committee, 179 Queen Street, Melbourne, close on Wednesday, 9th July.

For further particulars apply Mr. Chapple, Estates Officer. Telephone MY 5111, extension.

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Apply S. N. PIPER, Honorary Secretary, Cassilis Subsidized Hospital Committee.

ASSISTANT WANTED, for metropolitan area, general practice. Live out. Salary £2500 per annum, £5 p.w. car allowance. Excellent working conditions. Liberal time off. Reply No. 683, c.o. this office.

GOLD COAST, QUEENSLAND. W.B. two-bedroom home for sale. Corner position (beach road). Every convenience. Partly furnished, car accommodation. W.I., W.O., £5500. M 2721.

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TISH PHYSICIAN with e experience in general and special interest in seeks association or n group. Prepared to do ractice. Aged 38, married children, Cambridge and graduate (1943), war LD., M.R.C.P. Reply 19 ive, Bristol 7, England.

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COMMONWEALTH OF AUSTRALIA: DEPARTMENT OF HEALTH.

APPLICATIONS are invited for the position of Surgeon Specialist, Darwin Hospital, Northern Territory.

Salary: £3213, plus a district allowance of £275 if married or £175 if single, per annum. A taxation rebate of £180 per annum may be allowable.

Duties: Under the general administrative direction of Medical Superintendent. The successful applicant will be required to act as Surgeon Specialist to all hospitals in the Northern Territory, and will be responsible for the performance or supervision of the necessary major surgical procedures. Most of the major surgery will be performed at the Darwin Hospital, but periodic and emergency visits to other centres in the Territory are essential.

Qualifications: Applicants must have a medical degree registrable in the Northern Territory and a post-graduate degree or diploma in surgery (M.S., F.R.C.S., F.R.A.C.S.) or similar degree, and proven experience in the speciality.

Darwin Hospital is a large, well-equipped hospital of 200 beds, and provides all modern conveniences and equipment for modern surgery. A furnished house is available at Public Service Board rates.

Applications, stating name in full, date of birth, qualifications, experience, marital status, or any request for further information, to The Director-General of Health, Canberra, A.C.T., by 12.7.58.

FOR SALE IN SYDNEY: Ritter bone surgery unit with handpiece, suitable for fenestration or mastoid work. May be tested before purchase. Reply No. 682, c.o. this office.

LEASE OF GENERAL PRACTICE AVAILABLE in eastern suburbs (Sydney) for term of 18 months from January, 1959. Excellent opportunity for capable practitioner with surgical ability. Reply No. 681, c.o. this office.

RELIABLE AND EXPERIENCED LOCUM OR ASSISTANT AVAILABLE, preferably within Sydney area, from 2nd July, 1958. Ring LL 3883 (Sydney) before 9.30 a.m. or after 4 p.m.

FOR SALE, small solo lock-up practice, rather run down, vicinity St. Vincent's Hospital, Sydney. Low rent. £650. Reply No. 680, c.o. this office.

UNIVERSITY OF OTAGO: NEW ZEALAND MEDICAL RESEARCH COUNCIL.

PSYCHIATRIC RESEARCH OFFICER.

APPLICATIONS are invited for a new post of Senior Medical Research Officer with the New Zealand Medical Research Council. Applicants should be medically qualified and have had either a basic scientific training in physiology or pharmacology, a higher degree in medicine, or psychiatric training. As a scientific liaison post linking psychiatry, general medicine and pharmacology, the initial aim is to make objective studies of psychiatric interest, possibly in the field of psychopharmacology. Liberal facilities will be available in the Departments of Psychiatry and General Medicine and Pharmacology. The salary range for Senior Medical Research Officer is the equivalent of £A2034, rising to £A2406, at which point there is a promotion bar. Salary will be paid in New Zealand currency; £A1240 is equivalent to £N.Z.1000. Applicants should state their age, nationality, qualifications and clinical or other experience. Applications and inquiries regarding transportation allowances should be sent by air mail to the Chairman, Psychiatric Research Committee, Department of Medicine, Medical School, Dunedin, New Zealand, on or before 31st July, 1958.

GOVERNMENT OF WESTERN AUSTRALIA: PUBLIC HEALTH DEPARTMENT.

PERTH CHEST HOSPITAL.

A vacancy exists in the above hospital for a second year Junior Resident Medical Officer.

The hospital is of 216 beds and will function primarily for the investigation and treatment of pulmonary tuberculosis.

Applicants to be prepared to take up duties mid-August. Quarters available.

Salary £1045 per annum, from which board and lodging—£3 4s. 7d. per week—will be deducted.

Fare to Perth will be provided.

Applications or further inquiries to The Director, Tuberculosis Control Branch, Public Health Department, 17 Murray Street, Perth, Western Australia.

UNIVERSITY OF QUEENSLAND.

APPLICATIONS are invited for the position of Senior Lecturer (Clinical) in Medicine. Salary £2740-£2820 p.a. The applicant should have a higher qualification in clinical medicine and preferably some experience of medical research.

Further particulars and application forms are obtainable from the undersigned, with whom applications close on 31st July and not 30th June, as previously stated.—C. J. CONNELL, Registrar.

ASSISTANT, view partnership, wanted urgently in expanding Newcastle (N.S.W.) practice Salary £2000 plus car allowance and bonus. Reply No. 547, c.o. this office.

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No. 486. Sydney suburban. A very soundly established partnership of three will have a vacancy for a new partner on 1st January, 1959. A thorough introduction is assured. Hospital facilities are excellent. G.C.T. £24,000. Premium for full third share £4500.

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RENWICK HOSPITAL FOR INFANTS, SUMMER HILL, N.S.W.

APPLICATIONS on prescribed form are invited for the position of Honorary Child Psychologist. Particulars from Medical Superintendent.—W. B. RODD, Secretary, Benevolent Society of N.S.W., Thomas Street, Sydney.

HONORARY MEDICAL STAFF: SENIOR PHYSICIAN.

APPLICATIONS are invited for the above vacancy for balance of term ending December 31, 1959, on the basis that if a junior is promoted the position will then be for Junior Physician.

Applications must be submitted with original and nine copies by Wednesday, July 9, 1958, to G. T. ATKINS, Chief Executive Officer, Western Suburbs Hospital, Croydon, N.S.W.

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Modern brick home eminently suitable for doctor's residence both in layout and position. Contains three bedrooms, sunroom, large lounge-dining room, well-fitted kitchen and bathroom. Garage, etc., and many extras in price. £10,500. For further particulars 'phone XJ 5236.

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